

2005 NEWSLETTER



THE UNIVERSITY OF TEXAS AT AUSTIN
JOHN A. AND KATHERINE G. JACKSON SCHOOL OF GEOSCIENCES

GEOLOGY FOUNDATION
DEPARTMENT OF GEOLOGICAL SCIENCES
BUREAU OF ECONOMIC GEOLOGY
INSTITUTE FOR GEOPHYSICS



WILLIAM L. FISHER, DIRECTOR
GEOLOGY FOUNDATION AND
JOHN A. AND KATHERINE G.
JACKSON SCHOOL OF GEOSCIENCES

CLARK R. WILSON, CHAIRMAN
DEPARTMENT OF GEOLOGICAL SCIENCES

SCOTT W. TINKER, DIRECTOR
BUREAU OF ECONOMIC GEOLOGY

PAUL L. STOFFA, DIRECTOR
INSTITUTE FOR GEOPHYSICS

LAYOUT AND DESIGN
JAMIE H. COGGIN

EDITOR
SUSANN DOENGES

CONTRIBUTING EDITORS
K. DENISE APPERSON
J. B. BIRD
PATRICIA GANEY-CURRY
SYLVIA JENNETTE
GLYNIS G. MORSE
JULIE SPINK
DEBRA SUE TRINQUE

FRONT COVER
RESERVOIR CHARACTERIZATION
RESEARCH LABORATORY (RCRL)
GRADUATE RESEARCH ASSISTANT
TED PLAYTON (PH.D. CANDIDATE)
ACQUIRING GROUND-BASED LIDAR DATA
USING RCRL'S ILIRIS LASER SCANNER.
OUTCROPS ARE LOWER JURASSIC LOWER
SLOPE CARBONATE CHANNEL COMPLEXES
IN THE HIGH ATLAS, MOROCCO.
PHOTO BY KLAAS VERWER,
VRIEJE UNIVERSITY, AMSTERDAM.

INSIDE FRONT COVER
SANTA ELENA CANYON,
BIG BEND NATIONAL PARK, TEXAS.
PHOTO BY JAY A. RANEY.

INSIDE BACK COVER
HOOK 'EM HORNS! SAGUARO
CACTUS CARRIES TEXAS SCHOOL
SPIRIT TO THE LANDSCAPE OF
TUCSON, ARIZONA. PHOTO BY
CHARLES R. SEWELL (M.A., 1955).

BACK COVER
THE CENTRAL PART OF MUSKOX RIDGE
DIAPIR (PALE-GRAY ANHYDRITE RIDGE)
OVERLAIN TO THE LEFT BY FLUVIO-
DELTAIC SANDSTONES AND SHALES OF
THE CRETACEOUS ISACHSEN FORMATION,
SVERDRUP BASIN. ICE-COVERED
EXPEDITION FJORD IN THE BACKGROUND,
WESTERN AXEL HEIBERG ISLAND,
NUNAVAT, ARCTIC CANADA.
PHOTO BY MARTIN P. A. JACKSON.



VOLUME 55

2005 NEWSLETTER

THE UNIVERSITY OF TEXAS AT AUSTIN
JOHN A. AND KATHERINE G. JACKSON SCHOOL OF GEOSCIENCES

GEOLOGY FOUNDATION
DEPARTMENT OF GEOLOGICAL SCIENCES
BUREAU OF ECONOMIC GEOLOGY
INSTITUTE FOR GEOPHYSICS

Table of Contents



See related story, page 40



See related story, page 52



See related story, page 62



See related story, page 15



See related story, page 36

JOHN A. AND KATHERINE G. JACKSON SCHOOL OF GEOSCIENCES 1

William L. Fisher, Director

Letter from the Director	2
John A. and Katherine G. Jackson School of Geosciences staff	4
UTIG gets new home	6
Jackson School awards and honors.....	7
On the road again.....	12
Jackson School outreach efforts	14
Reflections of a retiring research scientist	22
Jackson School says farewell to staff retirees.....	23
Walter Library report, 2004–05	24
Jackson School postdoctoral fellows, 2004–05	26
Jackson School visiting scientists, 2004–05.....	26

DEPARTMENT OF GEOLOGICAL SCIENCES 27

Clark R. Wilson, Chairman

Chairman's report	28
Faculty notes	29
New faculty and staff.....	34
Research notes	36
Barnett Shale research: Science with special connections to the Jackson School.....	36
A new view of hydrology from satellite gravity, surface gravity, and radar imaging	37
Special lectures.....	39
Summer field camp 2004	40
Graduate degrees in Geological Sciences	42
Undergraduate degrees in Geological Sciences	44
Industry recruiting at the Department.....	45

BUREAU OF ECONOMIC GEOLOGY..... 47

Scott W. Tinker, Director

Letter from the Director	48
Research overview	49
Clastic and carbonate research.....	49

Structure research 50
 Image modeling 51
 CO₂ 51
 Center for Energy Economics 52
 Partnering with national labs 53
 Water research 53
 Museum outreach 54
 Special mention 55
 New people 56

INSTITUTE FOR GEOPHYSICS..... 57

Paul L. Stoffa, Director

Letter from the Director 58
 Research overview 59
 Conflicts between man and nature 61
 Impacts 61
 Geology and climate: hot (and cold) topics 62
 The interplay between plate tectonics and climate 63
 Integration of research with education 64
 Marine or terrestrial? Terrestrial or extraterrestrial? 65
 Special mention 65
 New people 66

GEOLOGY FOUNDATION..... 67

William L. Fisher, Director

Geology Foundation News 68
 Geology Foundation Advisory Council 70
 Gifts to the Geology Foundation 71
 Geology Foundation endowed accounts 73

MEMORIALS..... 75

NOTES FROM THE ALUMNI..... 81

CONTRIBUTION FORM special insert

JOIN US..... inside back cover



See related story, page 68



See related story, page 18



See page 45

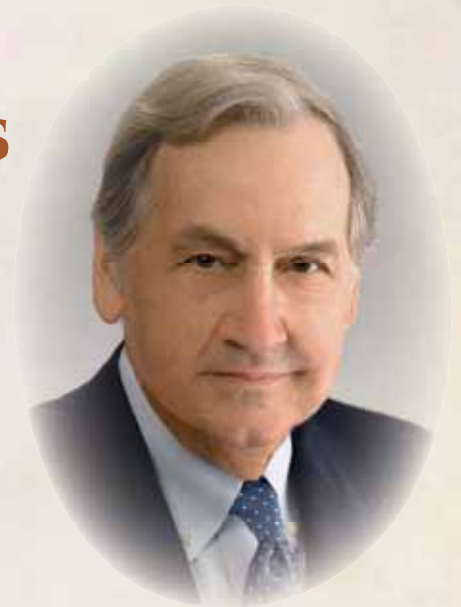


See page 82



See related story, page 6

Fisher Named Dean of Jackson School of Geosciences



As students were moving into dorm rooms and apartments, professors were preparing notes for the first day of classes, the Texas Longhorn football team was holding two-a-days, and this newsletter was being proofed at the print shop, long-awaited news about the geosciences hit campus. It's official: the Texas Higher Education Coordinating Board has approved The University of Texas at Austin's recommendation to establish the John A. and Katherine G. Jackson School of Geosciences as a separate unit at the level of a college. Leading the new college will be Dean William L. Fisher.

Fisher has served as director of the school since it was created within the College of Natural Sciences in 2001. He agreed to serve as the school's inaugural dean while the university conducts a national search for his replacement.

"Bill Fisher's service as both director of the Bureau of Economic Geology and chairman of the Department of Geological Sciences, his scientific leadership in American and international geological circles, and his federal appointments have given him tremendous national stature," said Dr. Larry R. Faulkner, president of The University of Texas at Austin. "The University of Texas and the larger community of geoscientists can depend on him for sure-handed leadership while the Jackson School charts its course for the future."

Fisher holds the Leonidas T. Barrow Centennial Chair in Mineral Resources and is a longtime professor in the Department of Geological Sciences and director of the Geology Foundation. He is a former chairman of the department and former director of the Bureau of Economic Geology.

A member of the National Academy of Engineering and the National Petroleum Council, he served as assistant secretary for energy and minerals in the U.S. Department of the Interior under President Gerald Ford. Among numerous honors and leadership posts in the geosciences, Fisher is past president of the American Association of Petroleum Geologists, the Association of American State Geologists, the American Institute of Professional Geologists, and the American Geological Institute.

Approval from the Texas Higher Education Coordinating Board marks the final step in a two-year process to create the new school. The approval followed positive recommendations from The University of Texas System Board of Regents, Chancellor Mark Yudof, President Faulkner, and the Jackson School Vision Committee, chaired by Dr. Peter T. Flawn, former president of the university.

When the late John Jackson, a 1940 geology graduate, bequeathed the remainder of his estate to the school, his goal was to invest his wealth in the future of young people studying geology and the earth and to assure that the Jackson School becomes one of the top institutions in the geosciences.

The new school combines three components at the university—the Department of Geological Sciences and the Institute for Geophysics, which will transfer from the College of Natural Sciences, and the Bureau of Economic Geology, which transfers from the portfolio of the vice president for research. The transfers became effective Sept. 1, when the three units began to report to Dean Fisher.



Lidar-based 3-D models of outcrops like this Cretaceous rudist grainstone shoal complex along the Pecos River have become the standard by which outcrop analogs of subsurface reservoirs are compared. Research by the Reservoir Characterization Research Laboratory has led the charge in pushing the technology envelope in integrated outcrop and subsurface geologic, petrophysical, geophysical, and engineering approaches to reservoir characterization and modeling.
Photo by Charles Kerans.



JOHN A. AND KATHERINE G. JACKSON SCHOOL OF GEOSCIENCES

William L. Fisher, Director

Letter from the Director



In December 2003, the Jackson School Vision Committee, headed by President Emeritus Peter T. Flawn, recommended, among other things, that the John A. and Katherine G. Jackson School of Geosciences be set up as an independent college-level entity, apart from the College of Natural Sciences, under the administration of a dean reporting directly to the Executive Vice President and Provost of the University.

Nineteen months later, in July 2005, the Vision Committee recommendation became a reality. The search for a new Dean of Geosciences begins in September 2005.

Upon receiving the Vision Committee recommendations, President Larry Faulkner chose a thoughtful and deliberate route in making his proposal. In early April 2004, he sent a 16-page memorandum to the University geosciences community laying out his inclinations regarding the future of the School. Later that month, after several rounds of discussions and comments, Dr. Faulkner indicated his plan to propose the Jackson School as an independent, college-level school. He put into place an Implementation Committee charged with drafting a charter and administrative structure of the proposed independent school. In the fall of 2004 the Implementation Committee reported to the President and the Provost; in January 2005, the President invited comments on the charter from the Jackson School membership. And in March the membership voted formally to approve the charter and the creation of an independent college. After the proposed charter was reviewed by the Faculty Council, President Faulkner wrote to the Executive Vice Chancellor for Academic Affairs for The University of Texas System seeking all final approvals. On July 8, 2005, the University of Texas Board of Regents established the Jackson School as an independent entity. Required review by the Texas Higher Education Coordinating Board was completed, and on August 9 final approval was made. The Jackson School will operate as an independent, college-level entity, headed by a Dean reporting to the Provost, effective September 1, 2005.

The Provost has set a time line for establishing the committee charged with searching for the Dean of the Jackson School. Nominations for committee members will begin in September and conclude in October, in time for the first meeting of the committee to be held the third week in October. By University procedure the Search Committee will consist of both elected and appointed members. They will conduct a national search.

In the interim, we have sought to advance the School and maintain momentum. During the year we negotiated with the Provost for new faculty positions and thus far have recruited three new faculty members and are in the process of recruiting three more. New faculty include Professor Omar Ghattas, who will hold the Jackson Chair in Computational Geosciences and work as a part of the University's Institute for Computational Engineering and Science (ICES) while holding joint appointments in Geological Sciences and Mechanical Engineering. Dr. Charles "Chip" Groat joins the Jackson School as the new Jackson Chair in Energy and Mineral Resources. His base appointment is in Geological Sciences, and he holds courtesy appointments in Petroleum

and Geosystems Engineering and Public Affairs. Chip will bring his substantial experience of six-and-one-half years as Director of the U.S. Geological Survey into play as Director of the Energy and Mineral Resources Program, an interdisciplinary degree program under the auspices of the Jackson School and the College of Engineering; he will also serve as the founding Director of the University's new Center for International Energy and Environmental Policy, a part of the Jackson School, Engineering, and Public Affairs. Dr. Charles Kerans, formerly a Senior Research Scientist of the Bureau of Economic Geology, joins the faculty as the Robert K. Goldhammer Chair in Carbonate Geology. Last fall the Department of Geological Sciences also welcomed Dr. Mrinal Sen to a part-time faculty position. His areas of specialty are exploration geophysics and seismology. Mrinal maintains a half-time appointment in the Institute for Geophysics. Additional faculty are now being recruited in sedimentary geology, geobiology, and geohydrology.

Plans are advanced for a new building for the Institute for Geophysics to be built on the Pickle Research Campus, adjoining the Bureau of Economic Geology headquarters. Scheduled occupation is late next year. This move will consolidate the School into two locations, rather than three.

The School is in its second year with a Research Initiative Program. Research proposals are solicited from members of the School and competitively awarded. Proposals must be matched by external funds and must include the hiring of additional research personnel.

A Postdoctoral Program was established three years ago, and recently a Jackson Visiting Distinguished Geoscientist Program was put in place. A Jackson Research Fellow Program is well under way that recognizes distinguished research scientists within the School. All graduate students admitted with support have a part-time stipend and pay no fees or tuition. This support program has enhanced our graduate program in both numbers and quality.

It has been my pleasure to direct the School since its creation in 2001, and I thank my Associate Director, Doug Ratcliff, and my colleagues that serve on the Executive Committee of the Foundation and the Steering Committee of the School. The Vision Committee, under the leadership of Peter Flawn, provided wise, essential recommendations. The attention and dedication to the School by President Faulkner have been substantial and effective. The Implementation Committee drafted a sound charter. And the Advisory Council of the Foundation continues to provide counsel and support. I will continue as the Dean, under the organizational structure provided in the new School charter, until such time as a new Dean is recruited and in place. At that time the School will be set to enter a new era and begin to realize the promise Jack Jackson foresaw.

William L. Fisher
Jackson School and
Geology Foundation

JOHN A. AND KATHERINE G. JACKSON SCHOOL OF GEOSCIENCES STAFF

THE UNIVERSITY OF TEXAS AT AUSTIN

DIRECTOR, WILLIAM L. FISHER



ASSOCIATE DIRECTOR, DOUG RATCLIFF

GEOLGY FOUNDATION

(in support of the Jackson
School of Geosciences)

DIRECTOR

William L. Fisher

ASSOCIATE DIRECTOR

Doug Ratcliff

TECHNICAL AND SUPPORT STAFF

J. B. Bird
Luciano Correa Vivar
George Mercado
Glynis Morse
John R. Ready
Alice Rentz
Porfirio Rosario
Julie Spink
Debra Sue Trinque

CENTER FOR INTERNATIONAL ENERGY AND ENVIRONMENTAL POLICY

DIRECTOR

Charles G. Groat

ENERGY AND MINERAL RESOURCES PROGRAM

DIRECTOR

Charles G. Groat

DEPARTMENT OF GEOLOGICAL SCIENCES

CHAIR

Clark R. Wilson*

ASSOCIATE CHAIR

K. Denise Apperson

PROFESSORS

Jay L. Banner*
Philip C. Bennett*
William D. Carlson*
Mark P. Cloos*
Ian W. D. Dalziel*
William L. Fisher*
Omar Ghattas*
Stephen P. Grand*
Charles G. Groat*
Charles Kerans*
Gary A. Kocurek*
J. Richard Kyle*
Leon E. Long*
Sharon Mosher*
Yosio Nakamura*
Timothy B. Rowe*
Mrinal K. Sen*
John M. Sharp, Jr.*
James T. Sprinkle*
Ronald J. Steel*
Paul L. Stoffa*
Robert H. Tatham*
Scott W. Tinker*
Willem C. J. van Rensburg*

ASSOCIATE PROFESSORS

Christopher J. Bell*
James N. Connelly*
James E. Gardner*
Randall A. Marrett*
Zong-Liang Yang*

ASSISTANT PROFESSORS

Robert J. Ferguson*
John C. Lassiter*
Libby A. Stern*

ADJUNCT PROFESSORS

Barbara J. Mahler
Thomas J. Serenko

PROFESSORS EMERITI

Milo M. Backus
Daniel S. Barker
Robert E. Boyer
L. Frank Brown
Stephen E. Clabaugh
Peter T. Flawn
Robert L. Folk
William E. Galloway
Edward C. Jonas
Lynton S. Land
Wann Langston, Jr.
Ernest L. Lundelius
Arthur E. Maxwell
John C. Maxwell
Earle F. McBride
William R. Muehlberger
Amos Salvador
Douglas Smith
John A. Wilson

POSTDOCTORAL RESEARCHERS

Sukjoo Choh
David C. Wilson
Yiwen Xu
Shuji Yoshida

LECTURERS AND RESEARCH SCIENTISTS

Matthew Colbert
Wulf A. Gose
Mark A. Helper
Todd B. Housh
Julian M. Humphries
Eric W. James
Richard A. Ketcham
John M. Lansdown
Lawrence E. Mack
Jessica A. Maisano
Fred W. McDowell
Kitty L. Milliken*
MaryLynn Musgrove
Guo-Yue Niu

TECHNICAL AND SUPPORT STAFF

Ryan R. Biggs
Roger O. Gary
Philip A. Guerrero
Jeffrey S. Horowitz
Effie L. Jarrett
Joseph Jaworski
J. Tyler Lehman
Kathryn L. McWilliams
Miriam L. Pashby
Christopher Stanton
Gregory L. Thompson
Dennis Trombatore
Renee A. Waters
William I. Woods

BUREAU OF ECONOMIC GEOLOGY

DIRECTOR

Scott W. Tinker*

ASSOCIATE DIRECTORS

Ian Duncan
Jay P. Kipper
Eric C. Potter

SENIOR RESEARCH SCIENTISTS/ENGINEERS, SENIOR RESEARCH FELLOWS, RESEARCH PROFESSORS

Milo M. Backus
L. Frank Brown
Shirley P. Dutton*
Robert J. Graebner
Bob A. Hardage*
Martin P. A. Jackson*
Charles Kerans*
Stephen E. Laubach*
Robert G. Loucks*
F. Jerry Lucia*
Stephen C. Ruppel
Bridget R. Scanlon*

*Member, Graduate Studies Committee

RESEARCH SCIENTISTS AND RESEARCH FELLOWS

William A. Ambrose
Sergey Fomel
Edgar H. Guevara
Susan D. Hovorka
Michael R. Hudec
James W. Jennings, Jr.
Jeffrey G. Paine
Jay A. Raney
Fred P. Wang
William A. White
Lesli J. Wood*
Hongliu Zeng

RESEARCH ASSOCIATES

Renaud Bouroullec
Sigrid J. Clift
Edward W. Collins
Michael V. DeAngelo
Beverly B. DeJarnett
Khaled Fouad
Julia F. Gale
James C. Gibeaut
Roberto Gutierrez
Ursula Hammes
Tucker F. Hentz
Mark H. Holtz
Xavier Janson
David C. Jennette
Jeffrey Kane
Angela McDonnell
Jean-Philippe Nicot
Robert C. Reedy
Shinichi Sakurai
Paul Sava
Diana Sava
Mark Tomasso
Thomas A. Tremblay
Ramón H. Treviño
Joseph S. Yeh
Laura C. Zahm

RESEARCH SCIENTIST ASSOCIATES

John R. Andrews
Jerome A. Bellian
Florence Bonnaffé
Caroline Breton
Dallas B. Dunlap
Tiffany L. Hepner
John Hooker
Rebecca H. Jones
Paul Murray
H. Seay Nance
Robert M. Reed
Randy L. Remington
Rebecca C. Smyth

Andrew Tachovsky
Rachel Waldinger

CENTER FOR ENERGY ECONOMICS

Michelle Foss
Gürcan Gülen
Ruzanna Makaryan
Dmitry Volkov

RESEARCH FELLOW

Luis A. Sánchez-Barreda

POSTDOCTORAL FELLOW

Timothy P. Dooley
Francisco Miranda
David R. Pyles

TECHNICAL AND SUPPORT STAFF

Jean L. Abernathy
Patricia A. Alfano
John T. Ames
Paula Beard
Sharon A. Bierschenk
George T. Bush
Dennis Campa
Sharon Campos
Marie Cassens
Jamie H. Coggin
Nancy Cottingham
Lana S. Dieterich
Maria Dingley
Susann Doenges
William H. Doneghy
James M. Donnelly
Patricia O. Downs
John Els
Nancy Ewert
Andrew P. Faigle
Tatiana Fomel
Julie Fowler
Claudia Gerardo
Ross W. Graham
Richard Gutierrez
Marcus Hafford
Aisha Hanif
Darrell Haynes
Amy Jo Hylkema
Nathan Ivicic
Anselmo Jacobo
Sylvia J. Jennette
David Jordan
Wanda L. LaPlante
Joel L. Lardon
Sally Macrae
Thomas Markowski

Amanda R. Masterson
Melanie A. McCammon
Randy McDonald
Lynda A. Miller
Daniel H. Ortuño
Kerza A. Prewitt
Guadalupe Rendon
Scott Rodgers
Ronald L. Russell
Robert A. Sanchez
Natalie Silva
David M. Stephens
Joseph Su
Deborah D. Thomas
Ann Turner

INSTITUTE FOR GEOPHYSICS

DIRECTOR

Paul L. Stoffa*

ASSOCIATE DIRECTORS

Ian W. D. Dalziel*
Clifford A. Frohlich*

RESEARCH PROFESSORS

William E. Galloway
Stephen P. Grand
Yosio Nakamura*
Mrinal K. Sen*

SENIOR RESEARCH SCIENTISTS

James A. Austin, Jr.*
Nathan L. B. Bangs
Richard T. Buffler
John A. Goff
Lawrence A. Lawver
Paul Mann*
Thomas H. Shipley*
Frederick W. Taylor, Jr.

RESEARCH SCIENTISTS

Donald D. Blankenship*
Gail L. Christeson
Craig S. Fulthorpe
Kirk D. McIntosh
R. Jay Pulliam

RESEARCH ASSOCIATES

Sean S. Gulick
John W. Holt
Charles S. Jackson
Luc L. Lavier

David L. Morse
Hilary C. Olson
Evelyn J. Price
Robert B. Scott
Roustam K. Seifoullaev
Harm J. Van Avendonk

SENIOR RESEARCH FELLOW

Millard F. Coffin

RESEARCH SCIENTIST ASSOCIATES

Marcy B. Davis
Lisa M. Gahagan
Patricia E. Ganey-Curry
Anatoliy V. Mironov
Matthew E. Peters
Thomas G. Richter
Steffen Sastrup

POSTDOCTORAL FELLOWS

Wolfgang Bangerth
Alejandro Escalona
Christina L. Holland
Matthew J. Hornbach
Faming Wang
Timothy L. Whiteaker
Duncan A. Young

TECHNICAL SUPPORT

John S. Gerboc
Kevin M. Johnson
Scott D. Kempf
Gwenith Watson
Mark Wiederspahn

ADMINISTRATIVE

Susan M. Beaubien
Katherine K. Ellins
Eleanor P. Picard
Judy C. Sansom
Donald L. Yarbrow

ADMINISTRATIVE ASSOCIATES

Janet E. Everett
Nancy L. Hard
Wilbert J. King

*Member, Graduate Studies Committee



Architect's rendering of new building to house UTIG and TACC, connected to BEG at left.

UTIG Gets New Home

Sometimes great things come in unexpected packages—like the Institute for Geophysics (UTIG). Since 1982 the internationally renowned research group has been housed in rental space in Austin, most recently in a nondescript business complex near the suburban neighborhood of Northwest Hills.

This is set to change in October 2006, when UTIG plans to move into a new world-class facility at the University's J. J. Pickle Research Campus. The new 90,000-square-foot building will house both UTIG and the Texas Advanced Computing Center (TACC). "UTIG will finally have a building to match its reputation," said Director Paul Stoffa, "and best of all, we will finally be on campus as a whole unit for the first time since our move from Galveston in 1982."

UTIG researchers are especially excited to share the building with the Texas Advanced Computing Center, which provides engineers and scientists with supercomputing and visualization facilities. TACC will get offices and a larger machine room in the new building. UTIG scientists will get ready access to TACC's advanced scientific visualization resources and high-end machines like Lonestar, the fourth most powerful supercomputer in the U.S. academic community, according to Supercomputing Online.

Just as importantly, the new location will facilitate work with other scientists at the University, including Jackson School colleagues from the Bureau of Economic Geology, which will adjoin the new UTIG building.

Construction is set to begin in September 2005. If all goes according to plan, one year later UTIG scientists and staff will move into their new facility.

Jackson School Awards and Honors

Faculty and Researchers

Professional Achievement and Teaching Awards



Don Blankenship received a Leverhulme Trust Fellowship from the University of Bristol. The Trust, established at the wish of William Hesketh Lever, the first Viscount Leverhulme, makes awards for the support of research and education.

The Trust emphasizes individuals and encompasses all subject areas. The Trustees place special weight on the originality of the projects put to them; the significance of the proposed work; the ability to judge and take appropriate risk in the project; and the removal of barriers between traditional disciplines.

Blankenship also received a NASA Achievement Award for his involvement as part of the Science Definition Team (SDT) for the proposed Jupiter Icy Moons Orbiter (JIMO) mission. NASA is developing plans for an ambitious mission to orbit three planet-sized moons of Jupiter—Callisto, Ganymede, and Europa—which may harbor vast oceans beneath their icy surfaces. The mission would orbit each of these moons for extensive investigations of their makeup, history, and potential for sustaining life. NASA's *Galileo* spacecraft found evidence of these subsurface oceans, a finding that ranks among the major scientific discoveries of the Space Age. The primary responsibility of the SDT has been to provide guidance to NASA that can be used to optimize the scientific return from the JIMO mission within programmatic constraints. The SDT was also charged with ensuring that this guidance reflects the current state of understanding of the Jupiter system and the needs of the science community.

L. Frank Brown was one of 11 distinguished researchers from across The University of Texas at Austin campus nominated for the University Cooperative Society's Research Excellence Award, which is given yearly to a faculty member or staff researcher who has maintained a superior research program over the years.

Once again, the winner of the G. Moses and Carolyn G. Knebel Distinguished Teaching Awards for outstanding teaching of Graduate and Undergraduate Geology is



William D. Carlson. He previously received this award in 2004, 1994, 1991, 1988, 1985, and 1981. The Knebel Teaching Awards are determined solely by a vote of undergraduate and graduate geology students. One of Bill's students, Brian Cornette—this year's undergraduate winner of our annual petrography contest—shared a few thoughts about what makes Bill Carlson such a good teacher:

Of course, my competency in the subject matter of petrography increased ten-fold when I took Professor Carlson's class. For one thing, his teaching skills are superb. He always made it his goal to find a route through the frustration and straight into the awe that results from an understanding of the history of the Earth through rocks alone. His love for petrography is so strong that it reverberates back right through his students.

Jim Connelly received a College of Natural Sciences Teaching Excellence Award.



Robert J. (Bob) Graebner

was chosen to receive the Society of Exploration Geophysicists highest honor, the Maurice Ewing Medal. This medal is awarded "from time to time

to a person who . . . is deserving of special recognition through having made major contributions to the advancement of the science and profession of exploration geophysics."



Charles G. "Chip" Groat (*below left*) received the Bureau of Economic Geology's Alumnus of the Year Award at the annual meeting of the American Association of Petroleum Geologists in Calgary. Chip

worked at the Bureau from 1968 to 1978, conducting environmental and mineral resources research in West Texas and the Gulf



Coast and serving as Associate Director. He was director of the U.S. Geological Survey from 1998 to 2005 and has returned to The University of Texas at Austin to join the Jackson School. He will head the Center for International Energy and Environmental Policy, a new public policy center at The University of Texas at Austin focusing on energy and the environment, and will also direct the Energy and Mineral Resources Program.



Bob Hardage received a Certificate of Appreciation from the Texas Board of Professional Geoscientists in recognition of Outstanding Assistance in the Development of the Texas Geophysics Exam. Bob has also been chosen to receive the 2006 Monroe G. Cheney Science Award from the Southwest

Section of the American Association of Petroleum Geologists. This award is given in recognition of “singular contributions to and achievements in the science of petroleum geology of the southwest region.”

Mark Helper and **Chris Bell** share the G. Moses and Carolyn G. Knebel Distinguished Teaching Award for outstanding teaching of Introductory Geology courses. Mark previously received a Knebel Teaching Award in 1995.



Susan D. Hovorka was one of three recipients of the Jackson School’s 2005 Joseph C. Walter Jr. Excellence Awards. This honor is in recognition of Sue’s groundbreaking research on the Frio Brine carbon sequestration project and tireless educational outreach. The award, formerly called the Houston Oil

and Minerals Corporation Faculty Excellence Award, has been given since 1977 to recognize excellence in research, academic, and administrative efforts. This year the Walter family agreed to expand the award across the Jackson School. (See also other award recipients Sharon Mosher and Doug Ratcliff.)

Gary Kocurek will be a Fulbright Scholar during fall 2005 in Prague. He will be hosted by the Academy of Science of the Czech Republic and Charles University. Gary will teach “Human impact on the Earth system” and “Sedimentary processes,” the first official course offered by the Academy. He will also help coordinate visits by U.S. and U.K. geologists who will help with the sedimentary course and field excursions.

F. Jerry Lucia was named a 50-Year Fellow by the Geological Society of America in recognition of his 50 years of support and commitment to the Society.

UTIG is proud that Senior Scientist **Paul Mann** was elected a Geological Society of America (GSA) Fellow at the May 2005 GSA Spring Council meeting. Fellowship

is an honor that the GSA bestows once each year on the best of the geoscience profession in recognition of their outstanding contributions to the field. Paul has made major contributions in the fields of tectonics and regional geology. Most of his work has been focused on the circum-Caribbean, where he has investigated plate motions, seismicity in Puerto Rico and the Dominican Republic, and the fault kinematics of the tightly curved eastern Caribbean arc system. He is active in both on-land and marine-based studies. These efforts have involved extensive collaborations with graduate students that have enriched their educational experience at UT Austin.



Sharon Mosher received one of three Joseph C. Walter Jr. Excellence Awards for academic excellence for her work in launching GeoScienceWorld, a comprehensive Web-based resource for research and communications in the geosciences.



Doug Ratcliff received one of three Joseph C. Walter Jr. Excellence Awards for administrative excellence for his organizational talents applied to the Jackson School and Geology Foundation, where he serves as associate director.

DigiMorph.org (developed by **Timothy Rowe, Julian Humphries, Richard Ketcham, and Matthew Colbert**) was recognized by *Scientific American* as one of the world’s top 50 science and technology Web sites in 2004. The site offers visualizations of the internal and external structures of many vertebrates and invertebrates (visit www.digimorph.org).

Bridget Scanlon was awarded the Conservation Award from Barton Springs Edwards Aquifer Conservation District.



Scott Tinker received the American Association of Petroleum Geologists (AAPG) Distinguished Service Award at the Annual Meeting in Calgary. He was also selected to serve as the 2005–06 AAPG International Distinguished Ethics Lecturer, delivering lectures at various conferences and venues worldwide. The title of his lecture is “The I in Business Ethics.”

Best Paper/Presentation Awards

Bill Ambrose was awarded the A. I. Levorsen Memorial Award for Best Paper by the American Association of Petroleum Geologists for his paper titled “Miocene Valley-Fill, Slope, and Submarine-Canyon

Systems in the Laguna Madre-Tuxpan Area, Mexico," which he presented at the 2003 Gulf Coast Association of Geological Societies Annual Convention in Baton Rouge, Louisiana.

L. F. Brown, Jr., Bob Loucks, and Ramón Treviño received the Third Place 2004 Gulf Coast Association of Geological Societies/Gulf Coast Section SEPM Gordon I. Atwater Best Poster Award for their poster "Isochronous Correlation of Sandstone Facies within and between Growth-Faulted Frio Intraslope Sub-basins: Common Correlation Pitfalls."

A paper presented by **Sergey Fomel** at the 2004 Society of Exploration Geophysicists Annual Meeting in Denver was judged by fellow SEG members to be among the top 20 best papers presented at the convention. Sergey's paper, "Theory of 3-D Angle Gathers in Wave-Equation Imaging," was chosen from the more than 750 abstracts submitted for the meeting.

Mike Hudec has been chosen to receive the 2006 George C. Matson Award from the American Association of Petroleum Geologists for his talk "A Compressional Origin for Minibasins near the Sigsbee Escarpment, Gulf of Mexico." Mike's talk was judged as the best paper presented at the 2005 annual convention held in June in Calgary, on the basis of both scientific quality of content and excellence in presentation.

Stephen C. Ruppel received the Luncheon Speaker Best Paper Award for 2003-2004 from the Permian Basin Section SEPM (Society for Sedimentary Geology) for the talk he gave in October 2003: "Reservoir Architecture of the Giant Fullerton Clear Fork Field; Insights for Reservoir Characterization in the Permian Basin."

A paper presented by **Paul Sava** at the 2004 Society of Exploration Geophysicists Annual Meeting in Denver was judged by fellow SEG members to be among the top 20 best papers presented at the convention. Paul's paper, coauthored by **Sergey Fomel**, "Wavefield Extrapolation in Riemannian Coordinates," was chosen from the more than 750 abstracts submitted for the meeting. Paul received his third Award of Merit from SEG, the most student-presentation awards given to one person in SEG history, for his paper.

Lesli J. Wood won the 2004 Best Presentation Award from the International Division of the Houston Geological Society for her December 2004 presentation titled "Quantitative Seismic Geomorphology of Clastic Reservoirs and Systems." Lesli is the principal investigator of the Quantitative Clastics Laboratory research group.

Students



Graduate student **Trevor Aitken** (M.S., May 2005) was awarded the Graduate Student Executive Committee Student Service Award for outstanding service by a geology graduate student to the graduate student community (selected by the GSEC). Trevor has completed his thesis on "Processing and Interpretation of MSC Data from Venezuelan-Trinidad Margin" and will go to work for Devon Energy, Houston. His UTIG supervisors were Paul Mann and Gail Christeson.

Gabe Bever was selected to receive the Houston Geological Society Outstanding Graduate Student Award.

Wes Crawford was selected to receive the Houston Geological Society Outstanding Undergraduate Student Award. He also received an Undergraduate Research Fellowship from the College of Natural Sciences, Student Government, and the University Co-op.

Laura DeMott received the Graduate Student Executive Committee Student Service Award for outstanding service by a geology graduate student to the graduate student community (selected by the GSEC).

Shanna Evans received an award for Best Student Poster from the Chihuahuan Desert Research Institute; she also received the honor of Best Student Poster at the Texas State University conference Texas Groundwater 2004: Towards Sustainability.

Lindsey Gulden was awarded a National Science Foundation Graduate Fellowship.



Dhananjay Kumar received an Outstanding Student Paper Award from the American Geophysical Union for the paper he presented at the 2004 AGU fall meeting in San Francisco: "Free Gas and Gas Hydrate Saturation Estimation from Multi-component Seismic Data Offshore Oregon." His coauthors are Mrinal Sen and Nathan Bangs. Dhananjay completed his Ph.D. in May 2005 and is now employed with Chevron in San Ramon, California.

Ph.D. candidate **Lorena Moscardelli** was given an Outstanding Student Paper Award by the Hydrology Section of the American Geophysical Union for her paper titled "Debris Flow Architecture and Processes in Offshore Trinidad: Implications for Basin Fill in Tectonically Active Margins," which she presented at the 2004 AGU fall meeting in San Francisco. Her coauthors are Lesli Wood and Paul Mann.



Sylvia Nordfjord has been awarded a DOSECC internship (\$4,000) for summer 2005.

Suzanne Pierce received Honorable Mention for Best Student Poster at the Texas State University conference Texas Groundwater 2004: Towards Sustainability.

Undergraduate student **Sara Pierson** created a poster selected for the College of Natural Sciences Undergraduate Research Forum Best Presentation. Sara is also the recipient of the Fredericksburg Rockhounds scholarship.

Dominique Schmid received the 2005 Estwing Hammer Award, which is given to an undergraduate student who demonstrates outstanding skills in field geology.



Undergraduate Research Assistant **Diana Smith** has been working with Don Blankenship, Matt Peters, and David Morse for the past year on Antarctic research at UTIG. This spring, Diana presented her work, "Radar Sounding Studies of Cracks at the Base

of the Ross Ice Shelf, Antarctica," at the undergraduate research forum/poster session held by the Science Undergraduate Research Group (SURGe) at UT. SURGe presented her with the El Paso Corporation Award for Excellence in Geology Research. This included \$500. Diana was also chosen as this year's Dean's Honored Graduate for geological sciences. This honor includes a \$100 book award. Diana will continue working at UTIG this summer. In the fall, she will attend the University of Arizona to pursue a Ph.D. in planetary science. She will be working with the Lunar Planetary Laboratory. Diana graduated from The University of Texas at Austin in spring 2005 with a B.S. in physics, a B.S. in geology (geophysics major), and a B.S. in astronomy.

Ph.D. candidate **Sean Sullivan** was awarded the 2005 Gulf Coast Section SEPM (Society for Sedimentary Geology) Foundation Ed Picou Fellowship Grant for Graduate Studies in the Earth Sciences for his proposed research on the formation of authigenic minerals in marine sediments.

Omar J. Varela was honored by the Society of Exploration Geophysicists, who chose the paper he presented at SEG 2003 as the best paper presented by a student at the annual meeting: "Joint Stochastic Inversion of Prestack Seismic Data and Well Logs for High-resolution Reservoir Delineation and Improved Production Forecast." Coauthors are Carlos Torres-Verdin and Mrinal Sen. Omar was recognized at the SEG 2004 annual meeting in Denver.

Brad Wolaver received an award from the Texas Groundwater Summit Conference for Best Student Poster in Applied Hydrology, 2004.

Technical Sessions Best Speaker Awards are determined by the students in Tech Sessions. Winners for spring

2005 were **Dana Derickson** (M.S.) and **Bryan Wilbur** (Ph.D.), and for fall 2004, **Matthew Davis** (M.S.) and **Leonel Gomez** (Ph.D.).

The winners of the competitive R. L. Folk/E. F. McBride Petrography Awards were **Brian M. Cornette** (working toward B.S. in general geology) and **Petros K. Papazis** (Ph.D., 2005). This award recognizes superior performance in petrographic identification and interpretation. Both will receive a generous cash prize donated by Tim Denison.

The Department hires between 40 and 60 teaching assistants each year to help teach labs and classes and run field trips. The TAs make a significant contribution to the teaching mission of the Jackson School. This year five of them were honored with the Outstanding Teaching Assistant Award: **Shanna Evans**, **Terence Garner**, **Chris Jass**, **Jeff Landrum**, and **Andrew Petter**. The awardees were selected using a combination of faculty nominations and student course evaluations.

The Jackson School is very proud to list the names of our Endowed Presidential Scholars: **Brad Cey**, **Jenny Cooke**, **Terence Garner**, **Elaine Goddard**, **Katherine Goepfert**, **Holden Hanna**, **Jad Hixon**, **Tim Lovitz**, **Ted Macrini**, **Kim Nguyen**, **Sylvia Nordfjord**, **Sarah Pierson**, **Dominique Schmid**, **Armando Sena D'Anna**, **Tim Shepherd**, and **Alka Tripathy**. A reception was held on campus in May for the students and their families.

The NSF-funded GK-12 outreach program provided scholarships and unique teaching opportunities for five graduate students: **Danny Baily**, **Christian George**, **Ethan Perry**, **Jeri Rodgers**, and **Joel Stevens**.

Melissa Halick received a scholarship from the Houston Geological Society. She is also one of four undergraduates who received Austin Gem and Mineral Society scholarships. Other recipients are **Ben Herber**, **Jon Kolvoord**, and **Paul Mehring**.

Jackson School graduate students were also recipients of numerous research grants and fellowships: **Jen Aschoff** (GSA research grant), **Nedra Bonal** (SEG and Geophysical Society of Houston scholarship), **Richard Kilby** (ConocoPhillips fellowship), **Patricia Montoya** (ConocoPhillips fellowship), **Lorena Moscardelli** (GSA research grant), **Suzanne Pierce** (EPA STAR fellowship; PEO Scholar award; Houston Geological Society scholarship), **Jeri Rodgers** (American Federation of Mineral Societies research grant), **Jennifer Thompson** (Banks fellowship, fall 2004), **Nina Triche** (American Museum of Natural History Frank M. Chapman research grant; GSA research grant; American Ornithologists Union Alexander Wetmore research award), and **Kira Diaz Tushman** (GSA research grant).

Staff

Jackson School of Geosciences Support Staff Excellence Awards



Luciano Correa received a Support Staff Excellence Award for his heroic efforts in setting up databases and maintaining computers at the Geology Foundation.



Lynda Miller received a Support Staff Excellence Award for her tireless efforts as the Bureau's Contracts and Grants Manager. A Bureau employee for almost 20 years, Lynda has earned the praise of the unit directorship, research scientists, support staff, and our external clients alike.



Representing the Department of Geological Sciences, **John Ready** received a Support Staff Excellence Award for his excellent ability in assisting with purchases. He is continually challenged to find replacement parts and supplies at the last minute and always comes through with the needed items.



UTIG senior systems analyst **Mark Wiederspahn** was awarded the Support Staff Excellence Award for UTIG. Mark began working at UTIG in January 1982 and has been indispensable to UTIG ever since.

Walter Geology Library Awards

Dennis Trombatore, the Geology librarian for the past 20 years, selected **Vickie Drake** and **Mabel Torres** for the Thelma Lynn Guion Geology Library Staff Awards.

Recipients of Staff Service Awards from The University of Texas at Austin

Name	Years of service	Unit
William A. Ambrose	20	Bureau of Economic Geology
John T. Ames	25	Bureau of Economic Geology
Susan M. Beaubien	10	Institute for Geophysics
Ian W. D. Dalziel	20	Institute for Geophysics
Susann V. Doenges	30	Bureau of Economic Geology
Andrew P. Faigle	10	Bureau of Economic Geology
John S. Gerboc	10	Institute for Geophysics
Wulf A. Gose	30	Geological Sciences
Edgar H. Guevara	20	Bureau of Economic Geology
Jeffrey S. Horowitz	25	Geological Sciences
Martin P. Jackson	25	Bureau of Economic Geology
Anselmo Jacobo	15	Bureau of Economic Geology
Floyd J. Lucia	20	Bureau of Economic Geology
William P. Mann	20	Institute for Geophysics
Fred W. McDowell	35	Geological Sciences
Daniel H. Ortuño	25	Bureau of Economic Geology
Porfirio Rosario, Jr.	10	Geology Foundation
Mrinal K. Sen	15	Geological Sciences
Rebecca Chappell Smyth	10	Bureau of Economic Geology
David M. Stephens	30	Bureau of Economic Geology
Paul L. Stoffa	20	Institute for Geophysics
Frederick W. Taylor, Jr.	25	Institute for Geophysics
Gregory L. Thompson	15	Geological Sciences
Fred P. Wang	15	Bureau of Economic Geology
Joseph Yeh	15	Bureau of Economic Geology

ON THE ROAD AGAIN

The Jackson School of Geosciences (JSG) went on the road again this past year. The JSG was welcomed by alumni as staff and students hosted several exhibit booths and alumni functions at professional society meetings. JSG staff and students made presentations, coordinated sessions, led field trips, and hosted separate exhibit booths at several national and international geological and geophysical meetings. The exhibition area at the national meetings is always the center of activity and business during the conventions. The JSG exhibit booth offers a setting for staff, students, and alumni to collect and convene, and the alumni events offer a designated time and place for friends of The University of Texas at Austin to get reacquainted. They also offer a venue for providing information to potential students and sponsors of the industry-funded organized research programs of the JSG. The events of the past year were well received by staff, students, and alumni, and future events promise more opportunities for the JSG to showcase its programs and create a relaxed setting for alumni and prospective students and staff to visit. Look to the JSG Web site for forthcoming abstracts and presentations, as well as exhibit booth and alumni event announcements and pictures from past events: <http://www.ig.utexas.edu/jsg/index.htm>.



AAPG President Patrick J. F. Gratton waves the UT flag as he visits the JSG booth at the international meeting in Cancun. Photo by P. Ganey-Curry.



From left, Dork Sahagian, ex-UTIG staffer, Clark Wilson, Tom Johnson, ex-student, and Jianli Chen, research associate at the Center for Space Research, visit at the annual AGU meeting. Photo by P. Ganey-Curry.



Graduate student Jamey Jones talks to prospective students visiting the JSG booth at the GSA meeting in Denver. Photo by J. Kopke.



Ex-students from Venezuela get reacquainted at the AAPG annual meeting in Calgary.

Left to right, Steve Speer and David Carr visit at the Jackson School alumni reception at the AAPG annual meeting. Photo by P. Ganey-Curry.

Bill Fisher greets alumni at the Jackson School reception held at the AAPG annual meeting.

The Jackson School welcomed visitors at several professional venues last year:

October 2004

Gulf Coast Association of Geological Societies (GCAGS) Convention

San Antonio

October 2004

Society of Exploration Geophysicists (SEG) International Exposition and Annual Meeting

Denver

October 2004

AAPG International Conference & Exhibition

Cancun

November 2004

Conference for the Advancement of Science Teaching (CAST)

Corpus Christi

November 2004

Geological Society of America (GSA) Annual Meeting & Exposition

Denver

December 2004

American Geophysical Union (AGU) Fall Meeting

San Francisco

April 2005

AAPG Southwest Section Meeting

Fredericksburg

June 2005

AAPG Annual Meeting

Calgary

For questions regarding JSG exhibits or alumni events contact the committee chairperson, Patricia Ganey-Curry, patty@ig.utexas.edu, 512-471-0408.



Frances and Fred Oliver enjoy the company of alumni at the JSG-sponsored reception at the AAPG meeting in Dallas. Fred is the new chairman of the Geology Foundation Advisory Council. Photo by P. Ganey-Curry.



Jackson School alumna and Geology Foundation Advisory Council member Susan Longacre enjoys winning the drawing for the JSG cap at the AAPG Southwest Section meeting in Fredericksburg. Photo by P. Ganey-Curry.

Make plans to visit JSG staff and students in the exhibit hall and catch up with fellow alumni at future events:

Meeting	Date	Location	Alumni Event
AAPG International	September 11–14, 2005	Paris	
GCAGS	September 25–27, 2005	New Orleans	Visit booth at icebreaker
GSA Annual	October 16–19, 2005	Salt Lake City	Monday dinner, Oct. 17
CAST Annual	October 27–29, 2005	Houston	
SEG Annual	November 6–11, 2005	Houston	Wednesday luncheon, Nov. 9
AGU	December 5–9, 2005	San Francisco	Wednesday luncheon, Dec. 7
AAPG Annual	April 9–12, 2006	Houston	Monday evening reception, April 10

Jackson School Outreach Efforts

Jackson School scientists, staff, and students have diverse interests and specialties. But one thing they have in common is that they love what they do and like to talk about it—which brings them to classrooms and lecture halls and conferences and field sites all over the world and even into virtual worlds. Whether they are identifying a rock for a five-year-old eager to have a name for his treasure, taking and analyzing soil and water samples from a remote lake in South America, or giving high school students a taste of college campus life and a summer field trip across the country to sites of geological interest, these Jackson School ambassadors of science are out there spreading scientific goodwill and nurturing the next generation of Earth scientists and responsible citizens of the planet.

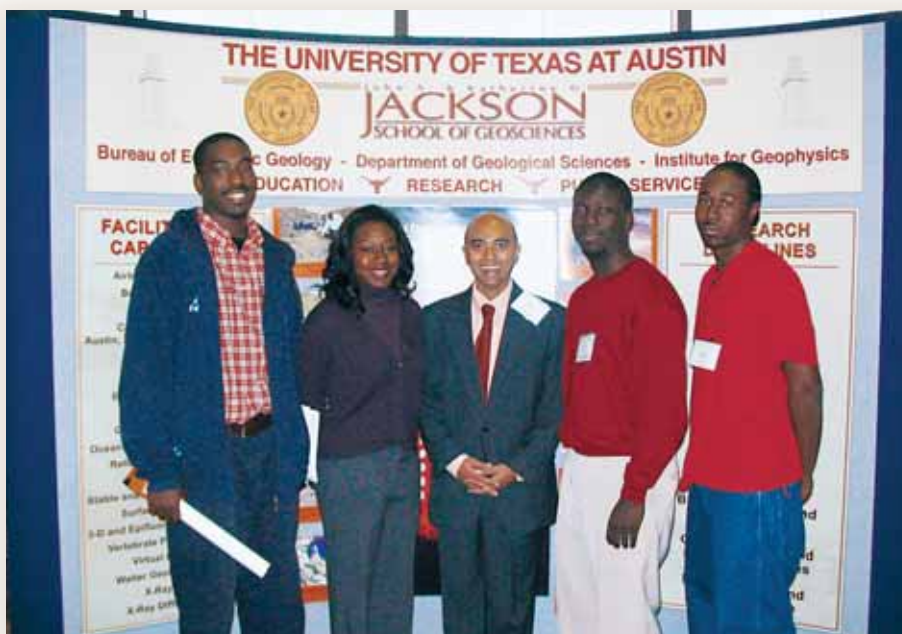
Fort Valley State University

The Jackson School continued to partner with the Fort Valley State University (FVSU, a traditionally black university in Georgia) Cooperative Developmental Energy Program (CDEP). Last year we helped Fort Valley prepare several proposals in an attempt to expand their funding base, hosted and funded their 2004 Mathematics, Science and Engineering Academy (MSEA)—a two-week summer program for rising 11th graders—and hosted their rising 12th graders for a day on The University of Texas at Austin campus. The goal of the MSEA program is to help ensure that these bright minority students, who are among the nation's best, graduate from high school, receive an accelerated degree from Fort Valley, then enter The University of Texas at Austin to earn a second degree in geological sciences after two more years. With this intensive

training, these students will be highly attractive to industry, as well as prepared to continue to graduate school.

Leon Long is the leader of all academic and field activities for the summer academies. He teaches basic geology to the students in the classroom and then takes them into the field to demonstrate what is learned in class. These intensive sessions often run for more than eight hours a day, and Leon endures it all with his usual enthusiasm and careful attention to the students. He has been assisted by graduate students Danielle Bailey, Brad Garner, and Anna Morisani.

Our involvement in this program has been a rewarding partnership for the Jackson School, and in fall 2005 UT will receive two engineering and two geology transfer students from Fort Valley.



The Jackson School is pleased to welcome four CDEP students to the University in fall 2005. Left to right, Stanley Stackhouse, April Duerson (geology majors), Aditya Kar (FVSU Geology Associate Professor), Prince Kwarteng, and Alex Tripp (petroleum engineering majors).

GeoFORCE Texas

Representatives from BP, ExxonMobil, ConocoPhillips, and Shell encouraged the Jackson School to increase our activities in diversity, and we have done so. We have created GeoFORCE Texas, a program to increase community awareness of the importance of the geosciences, initially targeting south Texas. GeoFORCE Texas will hold summer academies for high school students similar to those of the Fort Valley program. GeoFORCE Texas also supports guest lecturers, participation in local science and career fairs, and building of teacher awareness, all intended to inspire more students to pursue careers in geosciences.

We have been working with Southwest Texas Junior College (SWTJC) and the 19 school districts in the college's 11-county service area to recruit top math and science students for the program.

GeoFORCE Texas started in February by bringing high school math and science teachers representing 16 of the 19 school districts in south Texas to the Austin campus. The teachers participated in a workshop to establish networks and procedures for identifying high-achieving 8th to 12th graders for the summer academies.

The result of the workshop was tremendous. We received 118 student applications from 15 different school districts and ultimately selected 40 ninth-grade students to kick off the GeoFORCE Texas summer academies in July 2005. Student selection was extremely difficult because every student made the substantial effort necessary to complete the extensive application.

In April, an orientation session was held at the Southwest Texas Junior College (SWTJC) Uvalde campus for selected students, their parents, and academy chaperones. SWTJC President Ismael Sosa, Jr., Ph.D., a native of Cotulla, Texas, a small rural community north of Laredo, welcomed more than 120 students and parents. Students listened intently and in some cases provided translation for their parents and grandparents as the GeoFORCE Texas itinerary was laid out.

Beginning July 16, students will experience three days on the UT Austin campus to attend science and math classes and tour local geological sites.



The 2005 GeoFORCE Texas summer academy was warmly welcomed at USGS headquarters in Reston.

We then head northeast to Washington, D.C., for an exclusive presentation on careers in geosciences by the U.S. Geological Survey, headquartered in Reston, Virginia. From Virginia we head west to Albuquerque, New Mexico, and on to Taos, where students will get to explore fascinating geological sites of interest. From Taos, we head through Carlsbad to explore the caverns and then back to Uvalde for a grand closing ceremony dinner on July 27, where we will thank sponsors, present awards, and have fun talking about the trip.

"The orientation went great," program coordinator Julie Spink said. "We met the students and their parents, and the students had a chance to get to know each other a little. There were plenty of bright, shiny, smiling faces. It should be a great summer."

Future 10th-, 11th-, and 12th-grade GeoFORCE Texas summer academies have been added to the Jackson School outreach calendar:

Tenth—June 3–11, 2006

Eleventh—June 17–25, 2007

Twelfth—June 7–15, 2008

The communities of south Texas are responding with open arms. "This program is all about providing opportunities to aspiring young scientists by exposing them to the geosciences in ways that will hopefully motivate them to actively pursue geology as a future course of study," explained Doug Ratcliff, associate director of the Jackson School. "We believe this is exactly the kind of initiative our supporters envision for the growth of the Jackson School." Ronnie Kurtin, director of corporate human resources for Shell Oil Company,

The first class of GeoFORCE Texas students met each other in an ice-breaking game and then prepared to introduce themselves on stage to the entire audience at orientation on April 23.



agreed that the program serves a valuable purpose: "This program aligns well with our workforce development initiative, aimed at cultivating

prospective engineers and geoscientists to ensure our industry has the skilled workforce required for the future."

Outreach beyond GeoFORCE Texas

The GeoFORCE Texas application call uncovered a pool of outstanding, talented students who are seeking to excel in math and science. To reach these students, the Jackson School and SWTJC will also kick off the Young Geologists two-day field trip in July. This field trip will engage 34 students from south Texas and provide a geological look at their own backyard. Sigrid Clift, research associate at the Bureau, has offered to lead the field trip and share her geological expertise with these eager students.

"We serve a geographically isolated and educationally underserved area of the state," said Blaine Bennett, Ph.D., dean of technology and institutional advancement at SWTJC. "GeoFORCE Texas will literally open up the world to these students and truly has the potential to change their lives. We can't thank the Jackson

School enough for offering students in our area this unbelievable opportunity."

We are still seeking sponsors for the 10th through 12th grades. GeoFORCE Texas has the potential to become a trendsetter for increasing awareness of our profession and fits corporate objectives to increase diversity in the future geoscience workforce. We have already received financial commitments from Ms. Robbie R. Gries (President, Priority Oil & Gas LLC), the Shell Foundation, ConocoPhillips, ExxonMobil, Marathon, and the SBC Foundation.

Shell's early and substantial involvement has resulted in sponsorship status for the rising ninth-grade academy to be held at UT Austin this summer. Alumni who are interested in participating in or contributing to this program should contact Doug Ratcliff at dratcliff@mail.utexas.edu.

SCAMPI

UTIG hosted the biennial meeting of the Science Communication and Marine Public Information (SCAMPI) network May 11–14, 2005. Members of SCAMPI are the communications/public information officers and media relations officers at research institutions that engage in research and teaching in oceanography and related fields, including

marine geology and geophysics. UTIG is The University of Texas' institutional representative to SCAMPI's umbrella organization, the Consortium for Ocean Research and Education. SCAMPI members collaborate in much the same way as scientists from different institutions collaborate on major research endeavors. Members exchange the

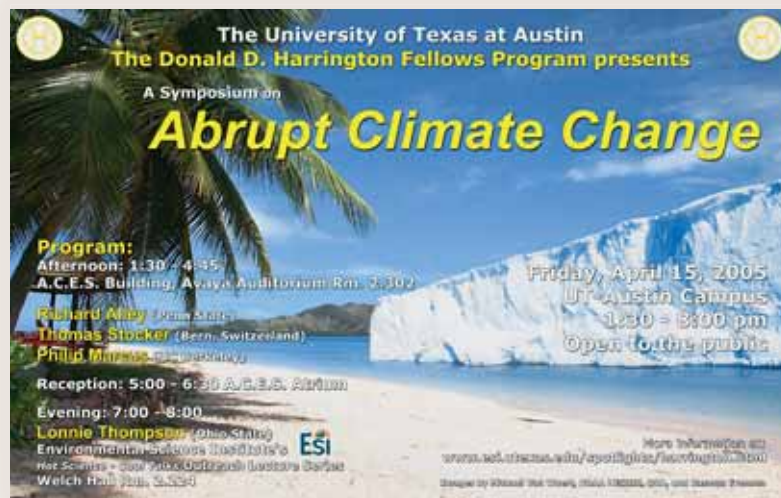
latest developments in technology, public relations practices, and media contacts/introductions; they pool resources whenever practical and appropriate and work together to develop joint media activities and other outreach programs to increase public

support of the science research underway at their respective institutions. Kathy Ellins (UTIG), J. B. Bird (JSG), and Sigrid Clift (BEG) participated in the SCAMPI meeting.

Symposium on Abrupt Climate Change

On April 15, 2005, the Donald D. Harrington Fellows Program, the Environmental Research Institute, and UTIG sponsored a university-wide symposium on the topic of abrupt climate change. Until recently, scientists believed that Earth's climate changes gradually in response to natural processes, as well as human-induced activities. In the last decades of the 20th century, however, new scientific evidence emerged to demonstrate that climate can change, and in fact has changed, rapidly and dramatically both throughout geologic time and on the human time scale. The symposium speakers included

author and professor Richard Alley of Pennsylvania State University and Lonnie Thompson of Ohio State University, who was elected to the National Academy of Sciences this year and who is widely known for his efforts to collect ice cores from Earth's fast-disappearing mountain glaciers.



Poster announcing the April 2005 conference on abrupt climate change co-sponsored by UTIG.

Field Trip to Trinidad and Barbados

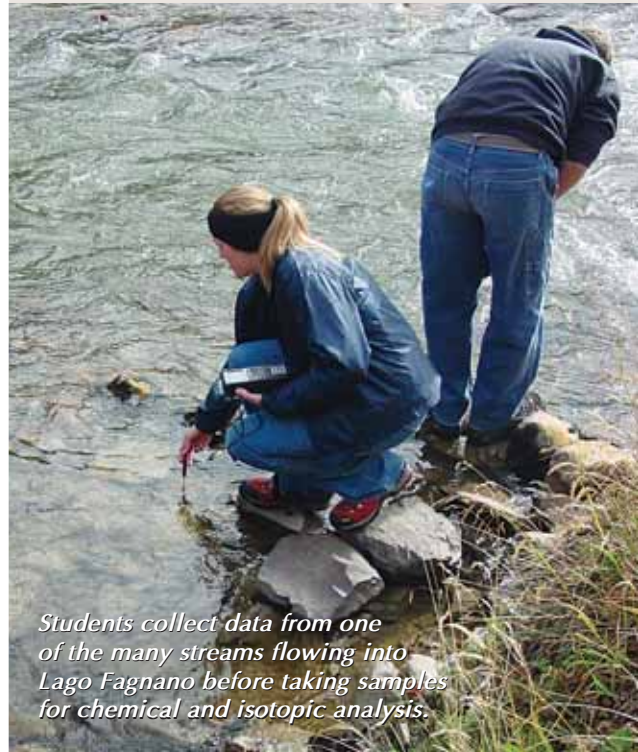
Paul Mann (UTIG) and Lesli Wood (BEG) led a group of oil company geoscientists on a five-day field trip to Trinidad and Barbados during March 2005. Participants were representatives of the six sponsoring companies of the Quantitative Clastics Laboratory (QCL) industry consortium, a joint UTIG-BEG study of the eastern offshore area of Trinidad. The group examined key outcrops of reservoir and source rock intervals in Trinidad and Barbados, including the prolific reservoir sands of the southeast coast of Trinidad, which form some of the world's most productive deltaic reservoir sands. Jackson School graduate students Ariana Osman and Nysha Chaderton co-led the trip in Barbados.



Paul Mann and Lesli Wood led a group of oil company geoscientists on a five-day field trip to Trinidad and Barbados during March 2005. The group represented the six sponsoring companies of the Quantitative Clastics Laboratory, a joint UTIG-BEG industry consortium currently focused on a study of the eastern offshore area of Trinidad.

Research on Lago Fagnano

In March 2005, three teachers and four students from Boerne High School (BHS, about 20 miles west of San Antonio, hometown of Seth Johnston, shortstop on the Texas Longhorn baseball team—winners of the 2005 National Championship) accompanied UTIG researchers, staff, and a National Science Foundation (NSF) GK-12 Fellow to Tierra del Fuego (southern Argentina) to contribute to ongoing climate and tectonic research on Lago Fagnano, the largest, southernmost, subaerial lake in the world. In addition to geologic mapping and reconnaissance directly tied to the UTIG research objectives, BHS students and teachers planned for and conducted water and soil sampling to assess chemical and isotopic trends within the Lago Fagnano watershed. These data will better characterize the modern geochemical setting of this lake and will be incorporated into the UTIG research, part of which involves reconstructing past climate from lake sediment cores. This field experience was an offshoot of the successful Texas Teachers in the Field Program, a Jackson School initiative that has sent teachers to the Bransfield Strait and the Caribbean Sea on research cruises. Although this initiative marks the first time that *students* have been included in the field experience, it promises not to be the last, given the dynamic interactions enjoyed by both the BHS teachers and students and the UTIG researchers.



Students collect data from one of the many streams flowing into Lago Fagnano before taking samples for chemical and isotopic analysis.



Under the watchful eye of Dr. Ian Dalziel (UTIG researcher in orange parka), students and teachers collect and record geologic measurements in their field notebooks.

Virtual Field Trips

“Geologic Wonders of Texas” is the title of an online public outreach module created by BEG researchers and staff for UTOPIA, an ambitious Web-based initiative designed to open the University’s doors of knowledge, research, and information to the public. This online field trip includes Dinosaur Footprints, Central Texas, Galveston Island, and the Franklin Mountains, additional resources, and lesson plans.

In addition to its contribution to UTOPIA, the Bureau reaches diverse audiences through its virtual reality presentations. John Andrews and Scott Rodgers frequently take to the road with the BEG’s portable 3-D virtual reality system for technology transfer and outreach learning to researchers, students, and the public. Topics include the Edwards aquifer, Central Texas geology, Big Bend National Park, and flyovers created using lidar and ILRIS laser scanning.

Community Involvement

Bureau Associate Director Eric Potter led his second annual field trip through Great Hills Park in northwest Austin on April 23, 2005. Eric, an active park volunteer, discussed the stratigraphy,

springs and creeks, and geologic processes that created the canyon where Great Hills Park is located. Bureau researcher Sigrid Clift assisted Eric with the field trip.

Support of Austin Schools

UTIG research staff and students often assist in various Austin area schools in the classroom and with events such as the annual science fair at Bertha Casey Elementary. This proves to be a rewarding experience for the student assistants, who share their enthusiasm for science with students who may become our future science majors. (Incidentally, Bertha Casey Elementary School was named for Miss Bertha Florence Casey, who taught Austin students for 41 years. Her sister, Josephine Casey, was a longtime editor at the Bureau of Economic Geology who passed away November 2004 [see Memorials]).



Past group of science fair judges on their noble mission at Casey Elementary School: “We do it for the sack lunch.”

Texas Hospitality

The Department of Geological Sciences has continued throughout the year to instruct groups of visiting students and their teachers from schools across Central Texas in basic geological concepts using tours of the building, our rock gardens outside, and other classroom materials. In 2004–05, we hosted a variety of groups from Boy Scout troops to 240 fifth graders brought here by a fleet of buses.

Partnering with Coastal Area Schools

The Texas High School Coastal Monitoring Program is in its ninth year of operation. Researchers from the Bureau’s Coastal Studies Group work with high school students and teachers, teaching them to measure the topography, map

the vegetation line and shoreline, and observe weather and wave conditions along Texas shores. Participating schools are Ball High School in Galveston, Port Aransas High School, and Port Isabel High School.

Presence at National Meetings

The Jackson School hosted exhibition booths at a number of national conferences this past year. Worthy of special mention are the annual National Conference of the Society for Advancement of Chicanos and Native Americans in Science (SACNAS) and the annual National Convention of the National Science Teachers Association (NSTA), held in Austin and Dallas, respectively. SACNAS provides strong national leadership in improving and expanding opportunities for minorities in the scientific workforce and academia; mentoring

college students in science, mathematics, and engineering; and supporting high-quality pre-college science education. The NSTA, with more than 55,000 members, is the largest organization in the world committed to promoting excellence and innovation in science teaching and learning for all. The Jackson School presented workshops on teacher research experiences and the learning activities developed by the NSF-sponsored UTIG-BEG "Cataclysms and Catastrophes" project.

Teacher Development

Bureau researcher Mark Holtz will once again teach at a summer program hosted by the Los Alamos National Laboratory in Santa Fe, New Mexico, titled "Research Experience in Carbon Sequestration." The program is designed to engage undergraduates, graduates, and early career professionals in carbon sequestration science. Last year's 10-day program involved 20 students from the United States and Norway.

UTIG and NSF GK-12 Fellows from the Department of Geological Sciences teamed up with Trinity University to deliver a professional development workshop to science teachers at the South Central Region Geological Society of America (GSA) meeting held in San Antonio in April 2005. UTIG's GK-12 Fellows also gave presentations on fossils, tsunamis, and teacher research experiences in Tierra del Fuego, South America, at Ridge View High School Parents' Night, April 28, 2005.

This past year, Kathy Ellins served on the education advisory committee for the Incorporated Research Institutions for Seismology (IRIS). UTIG hosted the spring meeting of this committee in February 2005. In addition, she participated in the second NSF-sponsored workshop on the *Revolution in Earth and Space Science* in November 2004. At this workshop teams of five people from four different states—California, Texas, North Carolina, and New York—began the development of strategic plans to promote Earth and space science education in their respective states. Kathy Ellins and Kirk McIntosh

were also invited to attend the NSF-sponsored Workshop on Teacher Research Experiences, April 24–27, 2005, at the University of Rhode Island Graduate School of Oceanography.

UTIG is proud of the achievements of UTIG's NSF K-12 teachers who have worked with Institute scientists and GK-12 Fellows. Several of these teachers have presented at fall American Geophysical Union meetings, South Central GSA regional meetings, the Conference for the Advancement of Science Teaching (CAST), and the annual National Convention of the NSTA. One teacher served on an NSF proposal review panel in summer 2004, and another was selected to serve on the UNAVCO Education Advisory Committee.



UTIG's 2004–05 GK-12 group with Mr. Cano on top, who will serve on the UNAVCO Education Advisory Committee.

Earth Science Week

The fifth annual Austin Earth Science Week Career Fair was held for 350 middle school students and their teachers October 12, 2004, at the Commons Conference Center at J. J. Pickle Research Campus. The highlight of the fair was the keynote presentation given by NASA Astronaut Captain Dominic Gorie. This annual event, organized

by the Austin Earth Science Week Consortium and coordinated by BEG researcher Sigrid Clift, includes a free summer lecture series. The 2005 lecture series features “Roving the Plains of Mars and Mapping the Moons of Saturn” and “ABCs of Aquifers, Bats, and Caves.”

Support of Museums

Bureau researcher Rob Reed served as a rock and mineral “identifier” at both Texas Memorial Museum Identification Day events this year, wherein experts from all over Central Texas are on hand to look at and identify natural objects such as fossils, rocks, and insects that visitors bring in for identification.

Bureau scientist Susan Hovorka, together with BEG technical staff, worked with the Witte Museum in San Antonio to create a 3-D visualization of a trip through the Edwards aquifer. This animation, shown in an immersive theater, allows visitors to experience the real Edwards aquifer through a visualization using real data collected using

ILRIS and CT scans. Sue is also involved with CO₂ outreach and a new online module titled “Audience-Pleasing Physical Models to Support CO₂ Outreach” posted on the BEG Web site.

Bureau researchers and media staff created a seven-minute video titled “Texas: The Underground Story—The Origin of Texas Oil and Natural Gas” to be installed as the centerpiece animation for the renovated Weiss Energy Hall exhibit at the Houston Museum of Natural Science. The video, constructed using detailed 3-D models and 2-D animations and graphics, takes the viewer from the onset of the Triassic rifting to the present day.



Cross sections of the Texas Gulf Coastal Plain created for the Houston Museum of Natural Science Weiss Energy Hall exhibit.

Reflections of a Retiring Research Scientist

By Fred McDowell

As I write this, my retirement after 36 years in the Department of Geological Sciences is a few months away. It is a time for reflection, and the question that I ponder most often is: "What has caused me to have such strong feelings of contentment and satisfaction?" Certainly, the roles of my wife, children, and now grandchildren in enriching my life and in gracefully accepting a comfortable but low-key lifestyle have been important factors. But there is also a workplace component. I have concluded that this component is a "spirit of generosity" that has prevailed consistently and pervasively throughout my employment. That spirit has been manifested in many ways, and at both institutional and personal levels.

I joined the Department in 1969 as its first Research Scientist, a new class of hire suspended somewhere between staff and faculty. This classification presented a new set of administrative decisions to the Chair and/or the Budget Council relevant to my situation and that of the Research Scientists who have followed. The nature of those decisions has ranged from large to small, but together they have composed an enthusiastic welcome into the academic side of the Department. They have included such things as library privileges, access to Geology Foundation resources available to the general faculty, an opportunity to try classroom teaching, and participation in faculty deliberations, where appropriate. The list could go on and on. Perhaps the most significant of these supportive gestures have been the two occasions when the Department has successfully petitioned the University administration to gain membership for me in the Graduate Faculty. This status has allowed me the privilege of supervising graduate students, using a second title of Lecturer. Thus, I suspect that I can claim the campus record—16—for graduate students wholly supervised by a Research Scientist, an accomplishment that is entirely due to the strong support of this Department. Throughout the tenure of nine chairpersons and a continually evolving Budget Council, every one of these decisions seems to have been made to my benefit. Furthermore, they have been executed with such grace that I have learned only long afterward of any difficulties or special pleading involved.

My prior experience and background as a "lab type" meant that I arrived here very green with respect to both "mainstream" geology and the operation of a large and strong earth science department. Many individuals helped to get me "up to speed." My first chairman, Bill Muehlberger, hired me literally before meeting me. Leon Long generously shared lab space, allowing me to complete the installation of a potassium-argon dating facility that he began. Steve Clabaugh became my mentor, dragging me along on student field checks to Llano and

West Texas, and ultimately to western Mexico, showing me opportunities whereby I could fulfill my mission of utilizing the K-Ar lab in collaboration with faculty research projects. Steve's enthusiasm for volcanic rocks and his joy and affection for the culture of Mexico led me to a career-long study of the volcanic rocks of the Sierra Madre Occidental (SMO). The most serious crisis during my employment came with Steve's retirement, when I realized that I would have to take over the entire SMO project. This included recruiting graduate students to work on the project, and I am indebted to Doug Smith and Dan Barker for their willingness to share a pool of students in igneous petrology that has never been sufficient to accommodate all of us.

Other enjoyable and fruitful major collaborations that have involved my K-Ar lab have been with Bill Muehlberger on the volcanic rocks of Honduras, with John Maxwell in the Franciscan of California, and with Mark Helper in the Klamath Mountains of northern California. During the 90's Mark Cloos and Rich Kyle involved me in their research at Grasberg and regionally in Irian Jaya (now Papua, Indonesia). Collaboration with Chris Henry, formerly with the Bureau of Economic Geology, on the geochronology of volcanism in Trans-Pecos has been another career highlight. Finally, as the necessity to broaden the lab component of the SMO project became apparent, colleagues such as Jim Connelly and Todd Housh have allowed access to their laboratories. Such opportunities have been facilitated by the Department's traditional "open door" lab policy.

In a final expression of the spirit of this Department, I will be allowed to retain my office until the space is otherwise needed. I will use this opportunity to publish at least some of the inevitable backlog of data that all analytical labs seem to acquire. In particular, I am committed to publishing a comprehensive set of our field and laboratory results from the SMO project. As I struggle to generalize the students' maps to regional scale, I am impressed anew by their accomplishments in mapping previously unstudied areas in a foreign land with difficult access and limited base map and air photo coverage. I hope that their experience as "pioneers" has enriched their professional lives.

The magic of direct deposit will permit me the pretense that I am still employed here even after I am "off the books." By combining this attitude with a more relaxed schedule, expanded travel plans, and development of other interests, I will adopt the Yogi Berra philosophy of retirement. It was Yogi who said, "When you come to a fork in the road, take it." All the while, I can look back fondly upon an enjoyable and satisfying career. I have mentioned only a few of those who have helped to make it so. Thank you, all!



J. Jaworski

Jackson School Says Farewell to Staff Retirees



J. Jaworski

Mary Koch, Senior Administrative Associate in the Geology Foundation Office, has retired after 36 years of service with the State of Texas. Mary began her University career in the Library in 1976 and transferred to the Bureau of Economic

Geology in 1979. She became the Administrative Associate for then Director Bill Fisher in 1980 and continued to provide administrative assistance to Bill until her retirement last year.

Mary was responsible for processing donations made to the Foundation, serving as liaison with Advisory Council members, and handling all logistics associated with the biannual Advisory Council meetings. Mary is well known to our many alumni and was someone that could be counted on to find answers to questions, no matter what the subject.



David M. Stephens, Photographer/Computer Illustrator at the Bureau of Economic Geology, retired in August after 31 years of service at The University of Texas at Austin. David began working part time for the Bureau in September 1974 after earning a B.F.A. in studio art/photography from UT. The

following January he also joined the Department of Geological Sciences part time in a similar capacity. He spent the first seven years at the Bureau and Department honing his skills in the studio and darkroom, photographing and developing film for scientists and faculty. In September 1981 he joined the Department on a full-time basis. David helped design the photography lab for the Bureau's new building constructed in 1984 at then Balcones Research Center, now J. J. Pickle Research Campus. He moved to the Bureau full time in June 1991.

David continued to handle all the film processing needs of the Bureau scientists and gradually applied his skills to the computer desktop as well, using photographic software to prepare digital images for display at meetings and inclusion in various publications. His conventional photography skills made him a natural artist in the digital realm,



J. Jaworski

William I. (Bill) Woods began working at the University 27 years ago in May 1978 as an Administrative Clerk in the Center for Middle Eastern Studies. After a year, he took the position of Administrative Assistant to the Chairman of the Division of Biological Sciences (now the

School of Biological Sciences) and worked there for four years. In June 1983 he transferred to the Department of Geological Sciences, when Earle McBride was Chairman. For the last 22 years, he has been our Executive Assistant.

In addition to his regular duties of assisting the Chairman and supervising the staff, over the years Bill took on duties that he saw needed doing, such as taking care of maintenance matters in the building, handling furniture needs and surplus, and serving as the building contact for service personnel.

Bill worked with six different chairmen in the Department through seven terms: Earle McBride, Bill Fisher, Clark Wilson, Bill Carlson, Mark Cloos, Gary Kocurek, and, again, Clark Wilson, adapting to each one's personal style of leadership with ease.

One of the things Bill enjoyed most was learning about the geological sciences, and in particular, faceting gemstones. During his third or fourth year here he sat in on the "Gems and Gem Minerals" course, then taught by Dr. Edward Jonas and Glen and Martha Vargas. He has since become an accomplished faceter.

In 1993 he received the College of Natural Sciences' Staff Excellence Award. In 2002 he received the Department's Distinguished Service Award.

Bill was one of the original founders of the University Staff Association (USA). He served on its Steering Committee and Board of Directors for several years and also wrote the bylaws for the Association. The USA later became the University Staff Council, which continues to represent staff concerns at UT today.

WALTER LIBRARY REPORT, 2004–05

BY DENNIS TROMBATORE

The Walter Library is not “new” anymore, but it has evolved into a comfortable and convenient information and communications stopover for a new generation of students and faculty. This past year we were fortunate to receive from the Walter family two lovely watercolors of western scenes by Betty Walter Spence and a beautiful walnut table made by Joe Walter to help decorate our donors’ portrait wall.

Meanwhile, with the end of spring semester looming, the library is full of students studying for exams, and right after that all the geologists will clear out for summer field work, leaving us to buckle down to finishing up some special projects. A review of the year about to be completed shows a number of significant accomplishments, most completed with the supplemental support of the Jackson School and the Walter Fund.

The Walter Library has been able to hire three Graduate Research Assistants (GRA’s)—Master’s students from the Information School—to help us make headway on some work that has been in progress for a long time. We have made huge strides in processing the ARCO library, and if we do not complete that project by August, we will certainly complete it before the end of 2005. Aside from some odds and ends, the only materials left to review are publications of the U.S. state geological surveys and the Canadian Survey. We have added thousands of theses, contractor reports, and technical books to the collection from this material, and it has boosted our interlibrary lending significantly over the past several years, adding value to the resource base of the entire region. We are also negotiating with a recently flooded library in Hawaii to place our surplus U.S. Geological Survey (USGS) publications from the ARCO collection.

Another GRA has been assisting the cataloging department to complete the process of changing all the remaining Dewey call numbers to the Library of Congress system, adding to and improving the records as she goes. She is also adding thousands of individual author/title records to the catalog for several of our series that have not had them before (such as the Texas Water Development Board Reports and the USGS Professional Papers), including linking them where possible to online versions of the texts. This work is tedious and time consuming, but once completed it will open thousands of new points of access to the collection for users, and will significantly improve the efficiency of research.

We have also used a combination of GRA and student hourly help to revise and improve our digital text offerings. The new Virtual Landscapes of Texas Web pages came on line recently (<http://www.lib.utexas.edu/books/landscapes/>), adding to the Dumble Survey publications the following new full-text publications of primary Texas geological sources:

- R. T. Hill and T. W. Vaughn—Geology of the Edwards Plateau
- R. T. Hill—Black and Grand Prairies of Texas
- T. Taylor—Failure of the Austin Dam, Texas Geological Survey: First Annual Report, First Report of Progress, and Second Annual Report
- H. E. Thomas—Effects of Drought on the Rio Grande Basin
- P. B. King—Geology of the Marathon Region, Texas
- T. W. Vaughn—Reconnaissance in the Rio Grande Coal Fields of Texas
- W. F. Hutson—Irrigation Systems of Texas
- G. Shumard—Partial Report on the Geology of Western Texas
- J. P. Nash—Texas Granites
- B. C. Tharp—Vegetation of Texas, and Reports of the Secretary of War with Reconnaissance of Routes from San Antonio to El Paso



Walnut table made by Joe Walter. Rusty Walter donated this table to accompany portraits of his parents—Elizabeth C. Walter and Joseph C. Walter, Jr.—in the Walter Geology Library. Photo by J. Jaworski (2005).

These publications include thumbnail image folders for those who wish to browse images, metadata tags, and improved formatting, though we are still editing some inconsistencies and small errors and linking problems. By September, we will also have added the five USGS Folio Atlases for the Texas region: Nueces, Llano, Van Horn, Austin, and Uvalde, as well as Marcou's Geology of North America. Taken as a whole these documents set the stage for the modern study of the geology of Texas, and reflect the concerns and interests of modern Texans. These documents present many challenges owing to loose and folded maps and illustrations, embedded typographical and tabular oddities, fragile paper and bindings, and other problems. To present them well and to digital preservation standards is difficult work. We have gained great expertise from this work, and developed a cadre of experienced staff, which will help greatly as the UT Library takes over the University's UTOPIA project management. Thus these projects benefit not only users of geology materials on the Web, but also the Library system and the University as a whole.

One disturbing new development that will have an effect on the Walter Library, and on other geology collections, is recent news that the USGS library system recently saw a 40 percent reduction in professional staff as a result of a buy-out offer. It is not yet known how many staff will be replaced, but major reorganizations are under way, and as USGS budgets have been static or shrinking, the future of collection strength and service capability from our "library of last resort" is clouded at best. This puts additional burdens on geology collections nationwide, and some cooperative efforts are in early discussion stages to make up for the potential loss, both to the GEOREF database and to geology researchers in the United States as a whole. Clearly, the availability of adequate endowment funds to complement collections will play a major role in maintaining our ability to respond to the needs of users in the absence of a strong federal information resource.

In staff news, Guion Award winners this year were Vickie Drake, the Library Assistant III in the unit, and Mabel Torres, an hourly Student Associate, for their many contributions, particularly in maintaining services and book ordering in my absence. Vickie also completed her Master's in Library and Information Science from University of North Texas this year, and is still serving on the Texas Higher Education Coordinating Board's Distance Education Advisory Committee as a student member. Rosemary Barker, our patient volunteer, has been a big help this year with gift and ARCO processing tasks, and she has also been helping with a project to better organize the Austin Geological Society's historical records, which are stored at the Walter Library. I visited Italy with Dr. Robert Folk last summer, got married last fall, and was out for most of March and April on medical leave. Quite a year. I am serving as chair of the American Geological Institute's GEOREF Advisory Committee and have been asked to serve on the GeoScience World Advisory Committee. GeoScience World (<http://www.geoscienceworld.org/>) is an exciting new online publications gateway recently launched after extensive effort by Sharon Mosher and Robbie Gries, among others.

Donors of books and materials to the Walter Geology Library in 2004-05:

*American Geological Institute
Chris Bell
Robert Blodgett
Bureau of Economic Geology Staff
Bill Carlson
Mark Cloos
Ian Dalziel
Patricia Dickerson
Carlo Doglioni
Cliff Frohlich
William Galloway
Beatriz Garcia-Fresca
Marcus Gary
Mark Gordon
Robbie Gries
Walt Haenggi
Wadene Harrison
Brian Hunt
Anatoly Kaplan
Elizabeth Walter Keeney
J. Richard Kyle
Randy Larkin
Leon Long
E. F. McBride
Fred McDowell
Donald McGookey
Kitty Milliken
Jerry Moore
William Muehlberger
Emilio Mutis
Linda Prosperie
Doug Ratcliff
Amos Salvador
Schlumberger
John M. Sharp
Doug Smith
Bill St. John
Yusliza Mohd Sufian
Chris Swezey
Robert Tatham
Dennis Trombatore
Ben Forest Uhl
Glen Vargas
Rusty Walter
Mrs. Hester White
Lesli P. White
Clark Wilson
James Lee Wilson
Charles M. Woodruff, Jr.*

Jackson School Postdoctoral Fellows,* 2004–05

Name	Sponsor	Research Project
Timothy P. Dooley	Martin P. A. Jackson	Physical Modeling
Alejandro Escalona	Paul Mann	Towards an Integrated Understanding of Regional Seismic Stratigraphy, Age of Deformation, Basin Shore Margin of Venezuela
Francisco Miranda	Sergey Fomel	Seismic Imaging Riemannian Extrapolation
MaryLynn Musgrove	Jay L. Banner	Ecohydrology of Semiarid Woodlands
David R. Pyles	David C. Jennette	Submarine Fan Architecture and Interaction between Tectonics and Sedimentation in Deep Water Settings
Faming Wang	Robert B. Scott	Understanding the Atmospheric Kinetic Energy Spectrum
David C. Wilson	Stephen P. Grand	Mapping the Rivera Subduction Zone
Yiwen Xu	Zong-Liang Yang	Potential Changes in Physical Climate and Land Cover Patterns in BVOC Emissions in Texas
Shuji Yoshida	Ronald J. Steel	Tidal Signatures and Architectures within the Regressive vs. Transgressive Shorelines

*Receiving JSG funds.

Jackson School Visiting Scientists, 2004–05

Arthur Grantz, sponsored by Lawrence A. Lawver

Dr. Arthur Grantz, Scientist Emeritus, retired from the U.S. Geological Survey (USGS) in 2003. He currently serves as a contractor to the USGS on their World Energy Program, mapping the location, general character, and tectonic setting of the potential petroleum basins of the Arctic Region. Dr. Grantz is also a consultant to the Department of State and USGS on United Nations Law of the Sea issues in the Arctic Ocean, the Sea of Okhotsk, and the Brazilian margin. Article 76 of the United Nations Convention on the Law of the Sea has put forth a series of guidelines to determine national economic jurisdictions. Complicated formulas in Article 76 have led to national claims that will severely impact future marine science research in regions of dispute. Dr. Grantz is a leading expert in this area and participated in a mini-symposium sponsored by the Jackson School of Geosciences on this topic on May 2.

Dr. Grantz was housed at the Institute for Geophysics during his stay, allowing research staff to take advantage of his data and expertise in planning and preparing for future research.

Eugene D. Humphreys, sponsored by Stephen P. Grand

Dr. Humphreys is a professor of geophysics at the University of Oregon who has broad interest in the tectonics of the western United States, both past and present. In pursuit of his goal to understand the evolution of the western United States, he has been involved in numerous different geologic and geophysical investigations, including seismic studies of the mantle and crust, numerical geodynamic modeling, Global Positioning System studies to better understand crustal kinematic motions within the western United States, and petrologic investigations to better understand magmatism and uplift in the region. Dr. Humphreys has also been creative in synthesizing different types of data to generate “big picture” models for the evolution of the western United States. In line with his research interests, he has played a major role in developing the Earthscope project and getting it funded.

Visiting Scientists Coming in 2005-06

Joseph A. Cartwright, School of Earth, Ocean and Planetary Sciences, Cardiff University, Wales, United Kingdom, sponsored by Martin P. A. Jackson

Terrence M. Quinn, College of Marine Science, University of South Florida, St. Petersburg, Florida, sponsored by Frederick W. Taylor, Jr.

*Sunset, Rincon
Mountains east of
Tucson, Arizona.
M.S. student
Ethan Perry and
his supervisor,
Sharon Mosher,
are studying
metamorphic core
complex rock
fabrics in the area.
Photo by
Ethan Perry, 2004.*



DEPARTMENT OF GEOLOGICAL SCIENCES

Clark R. Wilson, Chairman

Chairman's Report



We have just completed the UT Austin administrative process of creating the new Jackson School of Geosciences. President Faulkner has transmitted his recommendation to the Board of Regents for final approval, and the Provost will soon initiate the formal process of creating a search committee for the new dean. For the Department, this signals a time to begin planning the administrative reorganization that will be necessary when we separate from the College of Natural Sciences.

One of our first tasks is planning to take on student support and other duties currently handled in the Natural Sciences Dean's office. In many ways, we are well prepared. For example, we have a long history of operating our own placement service, with annual recruiting visits from 15 to 20 companies each year.

Although the primary users of this service have been graduate students, reflecting the preference of industry for Master's and Ph.D. recruits, with a little effort we should be able to broaden services to include undergraduates as well. Additionally, we will need to take on tasks such as evaluating progress of students toward their degrees, handling petitions, and providing a variety of other services now offered through Natural Sciences. Changes in staff duties and use of building space will most likely be required as we assume these new responsibilities.

Budgetary complications in creating a separate Jackson School are certain to result from the complex way in which the University collects funds from students and passes them on to colleges and departments. Once upon a time (decades ago), students paid a tuition rate based upon credit hours enrolled. Now, some colleges (including Natural Sciences) charge a flat tuition with no additional cost for more than 14 credit hours. In addition, students are charged a variety of general fees (for advising and other services), and course-specific fees (for field trips, lab expenses, etc). These fees, passed to us from the College of Natural Sciences, directly pay the salaries of several key staff in the Department. Budgetary separation will interrupt this process, with, at the moment, unknown consequences.

On the brighter side, as a separate School of Geosciences with an enrollment of just a few hundred undergraduate and graduate students, we will be able to personalize many aspects of student life. In anticipation of this, we organized our first Jackson School Endowed Presidential Scholarship dinner at the Alumni Center in early May, inviting both student recipients and donors. This month we are also hosting our first reception for undergraduate and graduate students and families, as part of the University-wide Spring Commencement festivities on May 21. This effort is a prelude to a separate Jackson School ceremony in the future.

I have reached the end of my first year as Chairman, having taken over from Gary Kocurek in September 2004. The time went quickly with few significant problems. I think this is partly because I had the experience of being Chairman previously from 1990 to 1994, but mostly because Gary left things in good shape. I have been able to continue commuting by bicycle, and am keeping up with research, teaching, and writing. This term as Chairman has also been somewhat easier on my family than my previous term. Now my older daughter, Kirsten, is away at college, and the younger one, Sissel, though still in high school, does not seem affected, as long as she has easy access to the car. I do not expect the coming months to be as light on problems, but I anticipate that with the excellent staff we have, and with the support of alumni, corporate friends, and fellow faculty, we will have a successful year ahead.

Clark R. Wilson



FACULTY NOTES

Daniel S. Barker

Dan Barker has kept busy with research, and his wife, Ro, with her volunteer work. Otherwise, they have traveled abroad and in Texas. In May 2004 they spent nearly three weeks in the Lake District of northwest England. They had unusually sunny and warm weather, and Dan saw famed volcanic rocks that had been scoured by glaciers and then by generations of geologists. Ro enjoyed the birds and plants, and they both enjoyed the people. Several trips to Big Bend allowed progress on Dan's mapping in the Park; he summarized his results in a poster at the annual Geological Society of America meeting in Denver. Then this year in April, Dan showed Jim Gardner, Rich Kyle, and their graduate students some volcanic features in Big Bend National Park. In May the Barkers made a trip to Nova Scotia to attend the Geological Association of Canada/Mineralogical Association of Canada meeting and field trips, where Dan presented his newest heresy on granite emplacement. A stop-over in Toronto to visit old friends brought this jaunt to a close. They plan another trip back to Canada in September, this time to Calgary for a reunion of Princeton geology grads and faculty from 1950 to 1968.

William D. Carlson

What a fantastic year this has been for Bill Carlson! It started off with a delightful trip to Florence for the International Geological Congress, where he gave the keynote address in a symposium on "Microstructural Influences and Controls on Dynamic Processes:

From Atoms to Lithospheres" and co-convened a symposium on "Geological Applications of X-ray Computed Tomography." Much of the fall semester was consumed with the task of chairing the Jackson School Implementation Committee, a group put together by the University's President and Provost and charged with defining the governance structure of the new School. Two students, Wes Crawford and Paul Mehring, completed outstanding undergraduate honors theses in December. A busy and challenging spring semester followed, spent mostly in the classroom, but culminating in an extraordinary surprise: Bill was deeply touched to be selected by student balloting to receive the Knebel Teaching Awards for both undergraduate and graduate teaching. His research was focused on a National Science Foundation-funded attempt to extract low-temperature rates of intracrystalline diffusion in garnet from naturally resorbed crystals, which succeeded far beyond expectation. The highlight of this unbelievable year came with the award of the Dana Medal of the Mineralogical Society of America in May at the annual international meeting of the Geochemical Society, and his presentation there of the Dana Lecture. When one adds in the graduation of one son from Stanford and the other from the UT business school, it's hard to imagine that this year could ever be surpassed—it just doesn't get any better than this!

Robert L. Folk

Summer 2004 was pure fun for Robert L. Folk. The first 2½ weeks he went to Italia with Dennis Trombatore, head of the

Walter Geology Library, and his wife, Shiela Winchester, reference librarian at the Perry-Castañeda Library. They spent several days enjoying the medieval architecture and hot springs of Viterbo and the world-famous Renaissance gardens of Bomarzo and Villa Lante. Then off via Pompeii to Amalfi by a harrowing bus ride. Finally they got to Sicily, the ancestral land of the Trombatores, and hit the island of Vulcano, where they enjoyed the trek to the crater spewing hot sulfurous gases. Dennis guzzled the grappa with cardamom. Shiela loves Byzantine mosaics, so they stopped at Cefalu to see the Duomo, and then to Palermo for the dazzling 1100's mosaics in churches and royal palaces. At Palermo they also took in the famous puppet show of Christian knights battling Moors. Then by train across interior Sicily to Agrigento and the Greek temples. Back in Roma, Dennis and Shiela left for the States, while Folk met Professor Libby Stern to show her a bit of Italian "dolce vita."

After a few days in Roma, they decided to go to Orvieto and by great luck happened to hit their annual festival involving a horse race (*palio*), parades, medieval costumes, flag throwers; highlight was Sunday after Mass when a pigeon slid down a long wire and crashed into the front of the Duomo, setting off explosions and blue smoke. "Wow! is the only word!" Then to Viterbo again, where they took a science tour of the thermal baths and got samples of white and black mud, with which they slather corpulent victims. There were wonderful pyrite framboids (bacterial, of course) in the mud. They did submerge in the hot spring pools of Bagnaccio. All of



Folk's companions were impressed with the solemn beauty of 1200's Viterbo architecture and shot lots of photos. Then on to Firenze and Pistoia; back in Roma they were able to watch the transit of Venus across the face of the sun, projected from a hole in the ceiling onto the marble floor of a beautiful church designed by Michelangelo from a third-century Roman bath. Only in Italia!

In September, Marge and Bob took their daughter Jenny and a lady friend of hers to Portugal; spent a few days in Lisbon and then on to Coimbra, a medieval University town, where Bob gave a lecture on nannobacterial clays to an International Sedimentology Congress. Portugal was charming; they enjoyed it very much, except for the execrable language. Food was good, wine nice.

Then in October they went to visit family in West Virginia and eastern Pennsylvania, and a reunion of the Nittany Co-opsers at Penn State (where they met in 1946). "Gosh, some of those former classmates looked old!" Bob said. He gave a talk in the Geology Department where he got all three of his degrees.

Science plods along with ups and downs. Nannobacteria are now exploding in the medical world; Folk's joint paper with UT colleagues Brenda Kirkland and Jeri C. Rodgers and Mayo Clinic coauthors on human arterial clogging with nannobacterial apatite has gotten lots of attention (*American Journal of Physiology*, September 2004). Folk says he still has a hard time getting papers accepted by "benighted geological editors," however.

William E. Galloway

Bill Galloway has taken advantage of the more flexible schedule of a part-time Research Professor

at the Institute for Geophysics to revitalize his penchant for fall travel. Fall trips have included the maples of the Upper Peninsula, Michigan, in '03 and the aspens of the Rockies in '04. A speaking engagement at the Canadian Society of Petroleum Geologists provided the excuse for an early summer driving trip through the northern Rockies, culminating in several days in Banff and surrounding Canadian national parks. As many who know Bill might suspect, he has also spent more time on the lakes and rivers attempting to put meat on the table in the old-fashioned way . . . by catching it. Fortunately, fresh fish is also available in the store.

The Gulf Basin Depositional Synthesis consortium continues into its 10th year. Discovery of thick, oil-bearing sands in Paleocene strata at the toe of the modern continental slope has revitalized exploration interest in and enthusiasm for the older Cenozoic section. Thus, Bill's attention is back on the unit where he began his geological career, the Wilcox.

Leon E. Long

Leon Long co-taught GEO 303 (the large-enrollment introductory course) with Libby Stern in the fall semester and with Steve Grand in the spring semester. This threesome has made a stable team for a number of years, though not nearly as far back as the late 1960's when Leon co-founded GEO 303. He has continued to facilitate the graduate course that is analogous to GEO 303 in covering all of geological science, and in May he taught the field course for nonmajors, many of whom aspire to become science teachers.

Leon also continued as undergraduate advisor, a role

that enables him to explore the philosophy of geology and being a geologist with lots of inquiring students, and to award Jackson School scholarship money to our worthy majors. He's heavily involved with the College of Natural Sciences, being a member of seven CNS committees and chair of one of them.

Summertime is Leon's opportunity to write up research (some of it getting old!). He presented a poster at the Geological Society of America meeting, and his long-awaited paper finally appeared in *Journal of Petrology*. He oversaw a Jackson School summer outreach program in which outstanding African-American high school students recruited from across the nation experienced geology in the classroom, but especially in the field—the wonderful Llano Uplift, of course. It is the objective of the program that these students first receive a B.S. degree in a related field and then attend UT for a second degree in geological sciences, then move on to graduate school or immediate employment in the profession.

Last summer, Leon and son Steve toured China, visiting the magnificent karst country of South China, and the Yangtze Gorges, the Three Gorges dam, various big cities, and finally, the End of the World, Tibet.

Ernest L. Lundelius

For the past year Ernie has been working on several projects. One long-term project with Bill Turnbull of the Field Museum is a study of the mammalian fauna from Madura Cave on the Nullarbor Plain of Western Australia. This project is almost done.

Another, with Russell Graham of Penn State, is the compilation of FAUNMAP II, a database of North



American mammals for the last 5 million years. The compilation is done, and they are now planning to use it to explore some questions about the faunal changes and their relation to environmental changes in the mammal fauna of North America over that period of time.

Several of the paleontologists at UT are looking into the possibility of using enamel hypoplasia in Pleistocene horses to determine if the degree of stress increased near the time of their extinction.

Ernie attended the CAVEPS (Conference on Australasian Vertebrate Evolution, Palaeontology and Systematics) in Naracoorte, South Australia, in March 2005, where he took part in a session on cave vertebrate paleontology.

Earle F. McBride

After 46 years, 155 classes involving 7,750 students, 38 years of teaching Geo 660 from 1 to 6 weeks in the summers, supervision of 52 M.S. students and 14 Ph.D. students, 126 invited talks, a couple hundred technical publications, and one 4-year departmental chairmanship, McBride retired. He plans to stick around the Department and work on unfinished projects, including calculating the “McBride Number,” which equals the total number of sand grains on Earth. Three people have previously failed at that task.

Sharon Mosher

Sharon Mosher had a very rewarding year in all respects. This spring saw the launch of GeoScienceWorld (www.geoscienceworld.org), which has taken all of her free time during the last four years. Sharon and Robbie Gries started a volunteer effort when they were Presidents of the Geological Society of America and the American Association of

Petroleum Geologists, respectively, to get geoscience societies to work together to make society journals easily available to libraries worldwide. As a result, 22 geoscience societies and nonprofit university presses have collaborated to put 30 high-quality geoscience journals online together that are all interlinked and intersearchable and fully integrated with the American Geological Institute’s bibliographic database GEOREF. For this effort she was very pleased to receive the Joseph C. Walter Jr. Excellence Award from the Jackson School.

Sharon had a very enjoyable spring semester teaching Earth, Wind & Fire. She finds teaching nonscientists about geologic processes and giving them an appreciation of the usefulness of the geosciences to be very rewarding. Teaching her graduate structural petrology course in the fall was also very enjoyable.

On the Llano front, Sharon’s student Jamie Levine finished her master’s work in the western Llano Uplift, further substantiating differences between the eastern and western uplift. Sharon also published two papers on eastern uplift deformation with former students Joe Reese, April Hoh, and Justin Zumbro. And truly on the “Llano front,” Sharon was excited to discover that new talc mines in West Texas expose the Grenville-age Streeruwitz thrust that juxtaposes Mesoproterozoic metamorphic and sedimentary rocks; a new master’s student is now working out the kinematics of this fault zone. Farther afield, a new Ph.D. student is starting a project in the Grenville Albany Fraser belt of Western Australia. Three other students are investigating strain partitioning in shear zones—two along Scotland’s Moine Thrust zone—and Ethan Perry is finishing a project on the formation of corrugation-

associated metamorphic core complexes. Research continues on the evolution of the Australia-Pacific plate boundary (south of New Zealand) from a spreading ridge to a transform fault and locally to an incipient subduction zone. The latest paper was published this spring (with Nathan Daczko, Mike Coffin, and Tip Meckel) on the sedimentary deposits on Macquarie Island that formed along spreading ridge-related fault scarps.

Working closely with other scientists as the Chair Council of Scientific Society Presidents was also very rewarding, as was working with her colleagues on the Jackson School Implementation Committee, which wrote the governance charter for the School. She also served on the National Science Foundation’s Advisory Committee for Geosciences, GEON’s Advisory Board, GeoScienceWorld’s Board of Directors as Chair, plus departmental committees. As part of the Texas State Board of Education Earth Science Task Force, she remained active working toward implementation of the high school graduation requirement for four years of science education that will allow Earth science to be counted as a science credit for graduation.

On a personal note, her youngest daughter, Lisa, is graduating from high school and will be going to Penn State this fall to study meteorology. So, Sharon and Mark will become empty-nesters next year.

William R. Muehlberger

In the past couple of years, Bill Muehlberger joined with the U.S. Geological Survey, National Park Service, Bureau of Economic Geology, and other academic



researchers to produce a new geologic map of Big Bend National Park. His work (with Eddie Collins, BEG, and Pat Dickerson, Adjunct Research Scientist) has been concentrated in the Glenn Springs Quadrangle that lies southeast of the Chisos Mountains. The only geologic map of this area is the original map of the Park by Ross Maxwell and associates, published in 1967. Bill reports that they are discovering fascinating features: fracture patterns, crustal xenoliths, complex laccolith/sill shapes! Some of this material was reported at the fall annual meeting of the Geological Society of America. Incidentally, Bill claims the hills are steeper and higher than they used to be!

Astronaut training continues: the delayed class from 2001 finally got their field trip into northern New Mexico in the summer of 2004. The current astronaut class had their trips in the summer of 2005. Astronaut training articles appeared in *Geotimes* and in the 2004 field guidebook of the Taos region published by the New Mexico Geological Society (Guidebook 55). That guidebook was dedicated to Bill for his pioneer studies in northern New Mexico.

May 2005 saw the publication of *High Plains of Northeastern New Mexico, A Guide to Geology and Culture* by the New Mexico Bureau of Geology and Mineral Resources (Scenic Trip Series Number 19). Bill co-authored it with his wife, Sally, and Greer Price of NMBG&MR.

Amos Salvador

Amos Salvador's energy study, on which he had been working for at least 15 years, was finally published as American Association of Petroleum Geologists' *Studies in Geology* Number 54: *Energy:*

A Historical Perspective and 21st Century Forecast.

What time was left from the final editing of the energy study was devoted to counter the efforts of the International Commission on Stratigraphy to eliminate the Tertiary and the Quaternary as units of the Geologic Time Scale. For this purpose, he has submitted a paper to AAPG titled "Tertiary and Quaternary Should Not Be Eliminated from the Geologic Time Scale." It includes an extensive review of the geological literature, including geological journals, stratigraphy textbooks, geologic maps, time scales, and GEOREF, that clearly shows that geologists the world over have used, and continue to use, Tertiary and Quaternary in their publications. Amos is hopeful that the paper will be published as a "geological note" in the *Bulletin*.

Douglas Smith

Doug Smith is enjoying retirement for many reasons. Department research facilities are better than ever before, and his research projects continue relatively free from unwanted interruptions. Wanted interruptions are common, however, because he and Jean spend significant time in Colorado. Moreover, travel can be arranged on short notice, and they recently returned from several weeks driving about southern France. He reports that, contrary to some current misconceptions, Texans are treated at least as well in France as they are in Colorado.

James T. Sprinkle

Jim Sprinkle's "big find" of last year occurred on July 31, 2004, when he was out in the field in southern Idaho with Forest Gahn, a postdoc at the Smithsonian Institution in Washington, and

amateur collectors Jake Skabelund and Paul Jamison of Logan, Utah. The amateurs had found a few fossil echinoderms in the Lower Ordovician Garden City Formation in northern Utah, and Sprinkle, who had also collected echinoderms from the Garden City between 1981 and 1993, and Gahn had flown out to Utah to examine these specimens and look for new material. Sprinkle described the scene: "The four of us had driven north into Idaho to look for new and better mountaintop exposures of this unit, and on that day stumbled onto the best exposed echinoderm-bearing Lower Ordovician section ever found in the western USA. We found 42 partial or complete echinoderm specimens associated with several sponge-algal mound layers at this locality, although we collected only a few echinoderm specimens that day because of the hard matrix and difficult working conditions." Although Sprinkle had to fly back to Austin the next day, Gahn and the two amateurs spent the next week measuring the Garden City section, finding about 60 additional echinoderms (bringing the total to more than 100), and collecting the best 20 of these echinoderm specimens. Sprinkle visited Gahn in Washington during Spring Break 2005, and together they described the four best preserved crinoids as several new genera and species. They plan to return to this locality during summer 2005 to collect the remaining echinoderm specimens that they had to leave out in the field over the winter and generate more data on their occurrence.

The rest of the summer and the academic year were less exciting but fairly normal. Sprinkle taught his writing-component Paleobiology course to 22 geology juniors and his Nomenclature and Techniques course to 4 graduate students in the fall, plus his Plate



Tectonics and Earth History course to 56 nonmajors and freshman geology students in the spring. He also gave several guest lectures for Leon Long's Modern Geological Sciences graduate course in the fall and led three field trips for his undergraduate courses during the year. He was involved in two talks with colleagues at the Geological Society of America meeting in Denver in early November that resulted in abstracts, and last summer visited co-workers in Las Vegas, Nevada, Rockford, Illinois, and Knoxville, Tennessee, to collect fossils for study or work on papers for publication. Another colleague visited UT in early January to work on a joint paper that was submitted for publication in mid-May, and two other papers will be published in the next month or two after long waits.

Scott W. Tinker

Scott W. Tinker is the Allday Chair of Subsurface Geology, Director of the Bureau of Economic Geology, and State Geologist of Texas. He writes of his activities over the last year:

"Although my heavy travel schedule and professional service commitments precluded teaching this year, I stay actively involved with students by serving on graduate student committees and look forward to spending a wee bit of time in the field this summer with Ned Frost and Ted Playton in Australia. I served on several faculty search committees that should result in the hiring of four new faculty members and have enjoyed my tenure on the Steering and Executive Committees of the Jackson School.

"In ongoing efforts to broaden the research base of the Bureau, I helped establish two new research centers. The Gulf Coast Carbon Center, established in 2004 and led by Dr. Sue Hovorka and Dr. Ian Duncan, has been recognized by the U.S. Department of Energy for its innovative pilot program in geologic sequestration of CO₂. The Center has broad private sector support and is also part of nearly \$15 million in pending Federal CO₂ capture and storage proposals for FY06. The Center for Energy Economics (CEE), a team of seven energy economists and engineers led by my good friend Dr. Michelle Michot Foss, joined the Bureau in June 2005. CEE will be based largely in Houston and will considerably strengthen the Bureau's ability to develop strategic energy plans and economic models worldwide.

"I have also been quite engaged in trying to bring broad energy programs together at UT. I was asked by President Larry Faulkner to lead a Task Force to look at collaboration with Sandia National Labs. From that came two small funded proposals, one with Jay Banner in the Department and one with Larry Lake in Petroleum and Geosystems Engineering and Tinsley Oden, who directs the Institute for Computational Engineering and Sciences. We hope these opportunities expand.

"On a larger scale, Bureau Associate Director Jay Kipper and I have been working with leaders from Sematech to establish a privately run International Advanced Energy Consortium. One-on-one meetings with 10 major international oil companies have led to several workshops and a positive outlook

that such a consortium, modeled after the Sematech structure, might indeed form in Texas. This would be a truly significant breakthrough in collaborative global energy research. More next year!

"I have traveled extensively to attend professional meetings, deliver lectures, and serve on various boards and committees. I was honored this year by the American Association of Petroleum Geologists (AAPG) with the Distinguished Service Award and also chosen to serve as the AAPG International Distinguished Ethics Lecturer for 2005–2006. I delivered 'The "I" in Business Ethics' as the keynote address at the Geological Society of America South-Central Section annual meeting and will present it several times over the next two years, including as the DPA lunch keynote at the AAPG annual meeting in Calgary.

"In the coming year I will serve as President-Elect of the Association of American State Geologists (AASG) and have worked with other state geologists to develop several issue papers on behalf of AASG to promote awareness of the importance of earth science in managing energy and mineral resources, among other topics. I continue to serve on the Board on Energy and Environmental Systems of the National Research Council and direct the Texas Regional Lead Organization of the Petroleum Technology Transfer Council.

"I look forward to collaborating with new staff, faculty, and students of the Jackson School as it grows into a federated School. Unfortunately, most of my communication will come from my BlackBerry® . . ."

DEPARTMENT OF GEOLOGICAL SCIENCES

New Faculty and Staff

K. Denise Apperson



K. Denise Apperson rejoined the Department in March 2005 as the new Associate Chair.

Because she earned both

her B.S. ('87) and Ph.D. ('92) degrees at the Department, this new position was in many ways a return home. Denise is also a native Texan. She spent 12 years with the Energy & Geoscience Institute at the University of Utah conducting applied research for the international petroleum industry. She has worked in many producing petroleum provinces throughout the world. Her research specialties are basin and petroleum systems analysis, evaluation of prospectivity of frontier areas, structural geology, sedimentary processes, and seismic sequence stratigraphy of both clastics and carbonates. Denise handles the academic and business affairs of the Department. She is a point of contact for faculty, staff, students, and alumni for a variety of issues that include academic reporting, student support, faculty and staff appointments, building management, instructional and department operating budgets, and coordination of teaching assistants, among other duties.

Omar Ghattas



Omar Ghattas has joined the Jackson School as professor in the Department of Geological Sciences and holder

of the John A. and Katherine G. Jackson Chair in Computational Geosciences. He is appointed half-time in the Department of Mechanical Engineering, and his base will be in the Institute for Computational Engineering and Science. Dr. Ghattas also holds courtesy appointments on the faculty of the Departments of Biomedical Engineering and Computer Sciences. He comes to the University from Carnegie Mellon University, where he was a professor of Biomedical Engineering and Civil & Environmental Engineering and also director of the Ultrascale Simulation Laboratory. He received his B.S.E., M.S., and Ph.D. from Duke University in 1984, 1986, and 1988, respectively. He is one of the recipients of the 2004–05 Outstanding Research Award given by the Carnegie Institute of Technology. He serves on numerous review panels for National Science Foundation programs and has played a major role in organizing workshops and conferences in his fields of specialty of scientific computing and engineering.

Charles G. Groat



Charles G. "Chip" Groat joins the Jackson School as professor in the Department of Geological Sciences and as holder of

the John A. and Katherine G. Jackson Chair in Energy and Mineral Resources. He holds courtesy appointments in the LBJ School of Public Affairs and the Department of Petroleum and Geosystems Engineering. Dr. Groat will direct the interdisciplinary degree program in Energy and Mineral Resources, jointly administered by the Jackson School and the College of Engineering. He will also direct the University's new Center for International Energy and Environmental Policy, a center operated under the joint auspices of the Jackson School, the College of Engineering, and the LBJ School of Public Affairs. Before accepting these University posts, Dr. Groat was the 13th director of the U.S. Geological Survey, where he served since 1998 under appointment by both President Clinton and President Bush. After earning his Ph.D. in 1970 at The University of Texas at Austin, he conducted research at the Bureau of Economic Geology and also handled administrative responsibilities as an associate director. Among his areas of

expertise in the geosciences, Groat has managed programs in energy and mineral resource assessment, groundwater occurrence and protection, geomorphic processes and landform evolution in desert areas, and coastal studies. He served as executive director of the American Geological Institute and was also the executive director of the Center for Coastal, Energy, and Environmental Resources at Louisiana State University. He also spent three years at The University of Texas at El Paso, where he directed the Center for Environmental Resource Management and oversaw the doctoral program in environmental science and engineering.

Charles Kerans



Charles Kerans has joined the faculty full time as professor and holder of the newly established

Robert K. Goldhammer Chair in Carbonate Geology, leaving his position as a senior research scientist at the Bureau of Economic Geology, where he conducted research for 20 years and helped establish the Reservoir Characterization Research Laboratory (RCRL). The RCRL grew under Dr. Kerans' leadership to an internationally respected carbonate research program that set world-class standards in innovative reservoir characterization techniques. Dr. Kerans has taught other scientists through many field trips and workshops and earned a reputation as a leading field geologist and stratigrapher.

He has served several tours as an AAPG Distinguished Lecturer and has twice won the Wallace E. Pratt Award for best paper published in the *AAPG Bulletin*. He earned his Ph.D. in geology from Carleton University, Ottawa, Canada, in 1982. He conducted postdoctoral research in Western Australia before joining the Bureau in 1985. Since then his field area has expanded to include the Persian Gulf, as well as the Permian Basin, South Texas, and West Texas and New Mexico.

Mrinal Sen



Mrinal Sen joined the faculty of the Department of Geological Sciences in August 2004. He continues

half-time as senior research scientist with the Institute for Geophysics. His research specialties are exploration geophysics and seismology, and he focuses on developing techniques for modeling, inversion, and processing of seismic data. He teaches courses on advanced seismology, inverse theory, and solid-earth geophysics. Dr. Sen received B.Sc. and M.Sc. degrees in applied geophysics from the Indian School of Mines and a Ph.D. from the University of Hawaii at Manoa in 1987. Since 1989, he has been a member of the research staff at UT's Institute for Geophysics, where he continues to hold a joint appointment as a research professor. Dr. Sen is co-author of a book titled *Global Optimization Methods in Geophysical Inversion* published by Elsevier.



J. A. Raney



Master's candidate Petro Papazis endeavors to obtain a "fresh" sample from an outcrop of the Barnett Shale, near San Saba, Texas.

RESEARCH NOTES

Barnett Shale Research: Science with Special Connections to the Jackson School

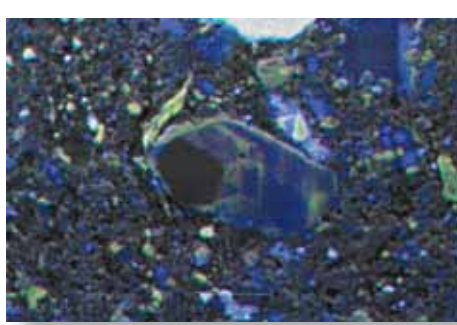
by Kitty Milliken

Problems, problems. Carrying out research on shale, the most abundant type of sedimentary rock, is challenging in several ways. First, getting suitable shale samples is difficult. Shale outcrops are typically hard to discriminate from the surrounding soil. Shale samples from the subsurface may be more intact but are still difficult to obtain: few shale cores are taken on purpose. Once you do get some good shale samples for study, the tiny size of mineral crystals in shales makes it challenging to obtain the information that one might use to decipher the rock's history. From an X-ray diffraction pattern, for example, one might determine that calcite is *present*, but what specific form of calcite *is* it? There are many possible answers: limestone fragments transported from a great distance, coccoliths settled from the water column, or cements precipitated long after deposition, or even fracture fills. In a sandstone or limestone, answers to such questions readily come from light microscope examination, but if particles are smaller than the thickness of a standard thin section, as they are in shales, this low-tech strategy becomes problematic. Even getting a good thin section of a shale is difficult. No wonder shales remain the great *terra incognita* of sedimentary petrology.

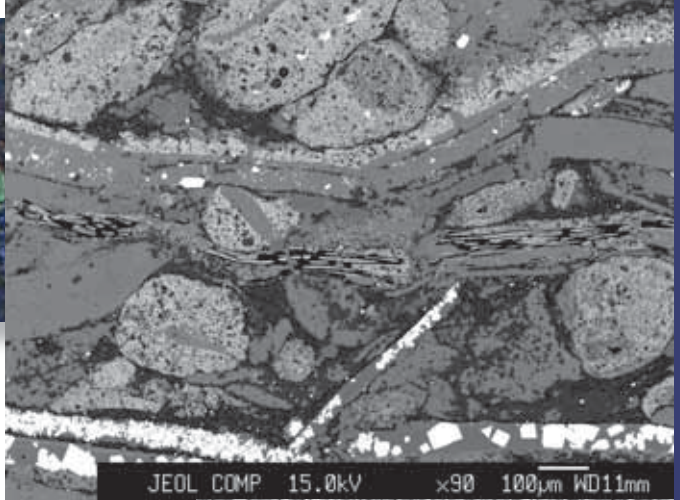
Opportunity to explore terra incognita: What if a shale became a hot exploration target? Well, someone would probably think to take some cores. And what if some of the revenues from this successful exploration were earmarked for research? And suppose some researchers happened to have some cutting-edge tools for petrographic imaging and analysis of extremely tiny crystals, along with an ongoing interest in shales? Well, if you've read recent issues of the *Wall Street Journal* or the *AAPG Explorer*, then you know the first question above refers to the Barnett Shale in the Fort Worth Basin. And if you've seen recent issues of this newsletter, then you know the second question refers to a familiar tale—the remarkable Jackson bequest of royalties from this very exploration play to the Jackson School. Combined with the fact that the researchers described in the third question happen to be *in* the Jackson School and therefore uniquely motivated to see those producing properties do well, then you have all of the necessary components for science having a unique connection to the Jackson School. Making basic contributions to an understanding of shales while simultaneously providing knowledge relevant to managing the School's resources is an opportunity too good to miss: several research groups within the School are busily engaged in studying the Barnett Shale.

Using materials from outcrops along the northern edge of the Llano Uplift (*photo at top left*), cores housed at the Core Research Center at the Pickle Research Campus, and additional materials lent by Devon Energy Corporation, master's student Petro Papazis (August 2005; now at Chevron) carried out a basic petrographic study of the Barnett Shale. Working with me, his supervisor, shale-guru collaborator Jürgen Schieber (Indiana University), and postdoc Suk-Joo Choh, Petro applied a variety of electron microbeam imaging techniques to identify the grain types and diagenetic features found in the Barnett Shale (*images at top of p. 37*). This work provides a vital foundation for upcoming studies that will delve into the geochemical history of the Barnett. Petro's technical sessions presentation on May 3 was made lively by an enthusiastic crowd of Barnett explorationists, and his poster at the American Association of Petroleum Geologists' annual meeting in Calgary was likewise well attended.

Among the many interesting diagenetic features found in the Barnett are mineral-filled fractures (*bottom right photo, p. 37*), something of certain interest to members of the Fracture Research and Applications Consortium (FRAC), an industrial associates program run by staff at the Department, the Bureau of Economic Geology, and the Center for Petroleum and Geosystems Engineering. I have been working with Rob Reed and other FRAC



Photomicrographs of interesting petrologic features in the Barnett Shale. Back-scattered electron image (above) of coarse shell-rich layer with rounded phosphatic intraclasts. Scanned cathodoluminescence image (right) of a pyrite-replaced detrital quartz grain.



participants to add a microstructural perspective to the petrologic work. In addition, John Olson and Jon Holder are making measurements of the subcritical crack index and other rock property measurements to support development of a model for predicting hydraulic fracture growth. Model results will ultimately be compared with microseismic data collected during hydraulic fracturing of the Barnett. On a larger scale, Steve Ruppel and colleagues are planning a regional stratigraphic study of the Barnett and its equivalents in basins in West Texas. All of this research is part of a broad effort led by Eric Potter to develop a systematic understanding of production histories and regional geologic context of the Jackson School royalty interests. So far this work has involved purchase and installation of databases, analysis of industry activity, regional log correlation, structural and isopach mapping, and review of thermal maturity data.

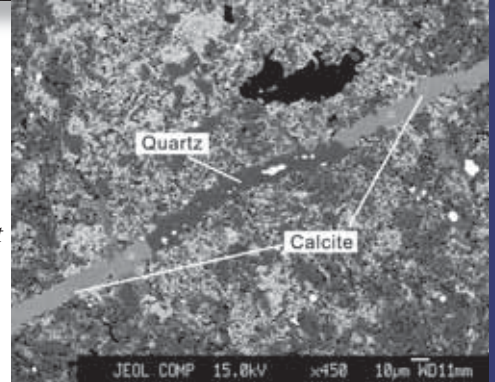
Careful management of the School's resources, risk-taking exploration into scientific *terra incognita*, and collaborative opportunities for researchers, teachers, and students within the newly created School are all the result of the coincidence of drilling activity in the Barnett Shale and Mr. Jackson's gift.

A New View of Hydrology from Satellite Gravity, Surface Gravity, and Radar Imaging

by Clark R. Wilson

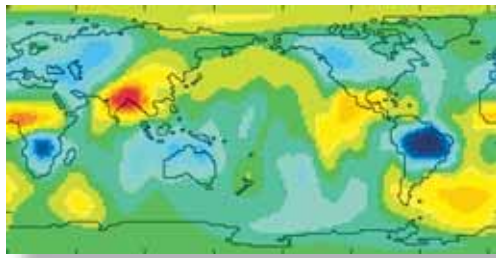
Several research projects are under way to develop new geophysical technologies for monitoring changes in groundwater storage. These efforts reflect

Small mineral-filled fracture in a sample of Barnett Shale (right). Bright spots within the quartz-filled part of the fracture are barite.



collaboration within the Jackson School, and with other UT research units, including the Center for Space Research. Groundwater storage changes are invisible to traditional optical remote sensing technologies, but two nontraditional observations, changes in the gravity field, and subtle surface deformation sensed by radar, have been employed in recent graduate student theses and are under continuing development with federal grants.

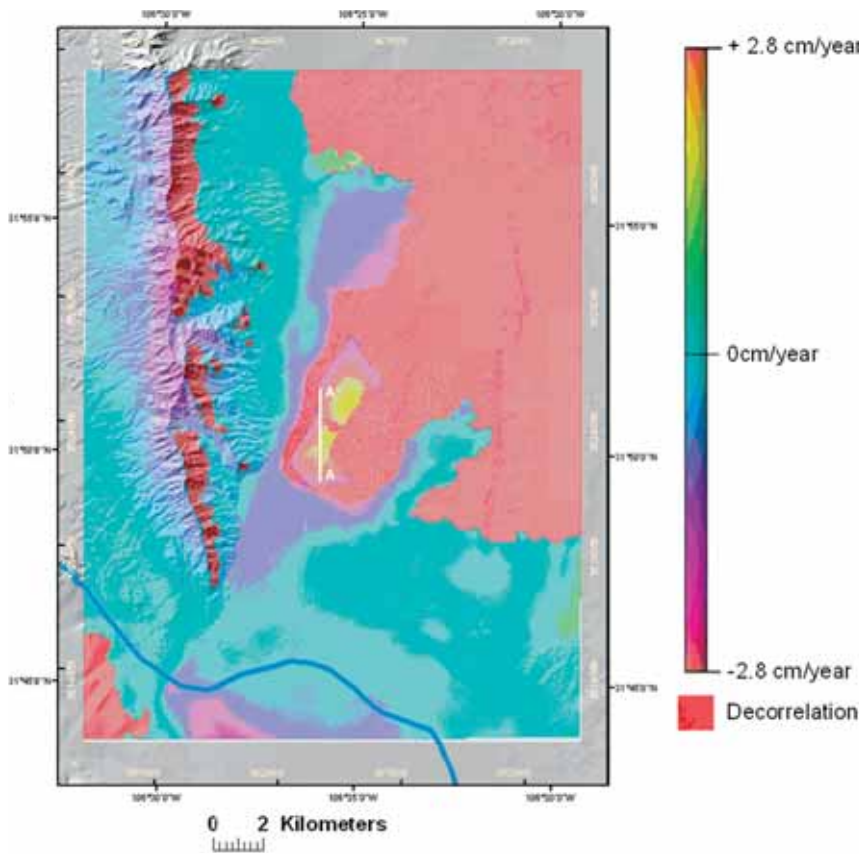
Everyone can understand that a change in stored groundwater will produce a change in the nearby gravity field. To make this concept useful in hydrologic studies, one needs a very precise measurement tool, and we are examining two that have such precision. One is an orbiting satellite pair, a joint mission of UT and the National Aeronautics and Space Administration (NASA) called GRACE (Gravity Recovery and Climate Experiment). The other is a surface gravimeter with a superconducting sensing element, called an FSG (Field Superconducting Gravimeter). NASA has provided funds for developing GRACE into a basin-scale hydrologic sensor. The mission is overseen by UT Aerospace Engineering Professor Byron Tapley. NASA has supported the work of Ki-Weon Seo (Ph.D., May 2005), faculty (Wilson), and research scientists at the Center for Space Research (including Jianli Chen, a 1998 graduate of the Department of Geological



Sciences). More than two years of GRACE data now provide a clear picture of the seasonal cycle of water storage in many major basins of the world, and GRACE results compare favorably with independent hydrologic information. The above figure shows clear gravity signals over larger basins such as the Amazon, the Ganges, and the Congo, for October 2003. Red areas have about +10 centimeters, and blue about -10 centimeters of average water storage change, relative to the mean. Future work will focus on improving the spatial resolution of water storage maps, quantifying errors, and applying the method to smaller basins, including ice-covered regions.

The FSG can detect changes in groundwater storage as small as one centimeter of water. With National Science Foundation funds, we are purchasing one of these instruments, and developing the power, packaging, and data-logging infrastructure prior to deploying it for field tests at a site over the Edwards aquifer. There, in operations alongside monitoring wells, it will directly measure the amount of water change corresponding to well-level fluctuations. This change is difficult to estimate in karst aquifers such as the Edwards, where storage is predominantly in caves, fractures, and tunnels. Additional field testing in Arizona is planned after the work in Central Texas. This project is a collaboration among Department of Geological Sciences faculty (Wilson, John Sharp) and Bureau of Economic Geology scientist Bridget Scanlon.

Changes in groundwater storage are often accompanied by surface displacements. The best known examples involve meters of permanent subsidence after years of groundwater pumping. However, more subtle, centimeter-scale vertical motion can be associated with seasonal groundwater storage changes. Interferometric Synthetic Aperture Radar (InSAR) uses differences in repeated space-based images to detect such deformation. With collaborating Aerospace Engineering/Center for Space Research faculty member Sean Buckley, two recent master's students used this technology to map surface deformation in arid environments. An image from Erick Leuro's thesis (*left*) shows a depression formed near El Paso owing to city water system pumping in the region around the profile (A-A'). The vertical rates of motion are only about two centimeters per year, derived from radar images taken over several years. A positive rate corresponds to subsidence. The Texas-Mexico border is the blue line at the bottom, and the Franklin Mountains show up clearly on the left.



Special Lectures

Department of Geological Sciences

W. Gary Ernst (Stanford) spent a week in March at the Department as the Allday Lecturer in Geological Sciences. His lectures were “Metamorphism of the western conterminous US”; “Continental collision, ultrahigh-pressure metamorphism, crustal growth, and crustal thickness”; and “Global resource consumption and global equity—Doomsday around the corner?”

Ron Steel (UT) gave an American Association of Petroleum Geologists Distinguished Lecture in November on “Improving our sequence stratigraphic models.”

William Woessner (University of Montana) was the Birdsall-Dreiss Distinguished Lecturer. He gave a talk in February on “Examining the exchange of groundwater with the stream/floodplain system: Physical, thermal and geochemical approaches with ties to stream renaturalization.”

David Mohrig (MIT), the Boyd Lecturer in Geological Sciences, gave several presentations in November: “Shallow channels constructed by deep turbidity currents: Do turbidites record the scale and composition of depositing flows?”; “Filtering stratigraphic patterns associated with internally generated versus externally driven processes: An example from the late Pliocene Fisk Basin, Gulf of Mexico”; and “Sandy channel-filling deposits as quantitative indicators of sediment and water flux for ancient terrestrial environments.”

Greg Erickson (Florida State) was the Langston Lecturer in Paleontology. He spoke on “Building giants: Unlocking the mysteries of dinosaurian growth patterns.”

Chunmiao Zheng (University of Alabama) was the Oliver Lecturer in Hydrology. His presentations in February were titled “Understanding solute transport in extremely heterogeneous media: What has been learned from 20 years of research at the MADE site?” and “Optimization for aquifer management and monitoring: Past, present, and future.”

Chris Scholz (Columbia University) was one of two Oualline Lecturers in Geological Sciences hosted by the Department. Chris gave a series of talks in March titled “Mechanics of fault propagation”; “Is the San Andreas fault weak?”; and “Mechanics of fault interaction and scaling.” **Chris Paola** (University of Minnesota) was the second Oualline Lecturer. In April, he gave talks on “Analogy, analysis, and experimentation in stratigraphy”; “Experimental stratigraphy: Shoreline dynamics”; and “Experimental stratigraphy: Alluvial architecture, mass balance, and sequence boundaries.”

The Department hosted two Society of Exploration Geophysicists Distinguished Lecturers. In September, **Heloise Lynn** (Lynn Inc.) gave a talk on “The winds of change: Anisotropic rocks ... their preferred direction of fluid flow and their associated seismic signatures.” In March, **Greg Partyka** (BP) spoke on “Spectral decomposition.”

Summer Field Camp 2004

by Mark Helper



Group photo at Signal Mountain, Grant Teton National Park, summer 2004. Photo by Neil Jones.

A large class of 37 students left Austin on May 29, 2004, for six weeks of field projects and travel along a route similar to that of the class of 2002. The class was staffed by six faculty, six teaching assistants, and two graduate student Assistant Instructors, who, over periods of three days to four weeks, joined up with the group to teach or assist with projects in their specialties.

Dr. Jay Banner accompanied the group from Austin to Carlsbad, New Mexico, where the class spent three days doing the now traditional projects along a backreef-to-basin transect through the Guadalupe Mountains. After a short stop to visit the Caverns, the class moved to Ghost Ranch near Abiquiu, New Mexico, where Drs. Banner and Gary Kocurek led the class in an exercise that examined depositional characteristics of the Entrada

and Todilto Formations. The group was then joined by Dr. Lesli Wood, who traveled with the class to the Black Canyon of the Gunnison and on to Rock Springs, Wyoming. Working out of dormitories at Western Wyoming Community College in Rock Springs, Drs. Wood and Ron Steel spent

five days instructing students in the interpretation of fluvial-deltaic environments and sequence stratigraphic concepts in Cretaceous and Tertiary units of the Rock Springs Uplift.

The group then traveled north to Greybull, Wyoming, where, with Drs. Randy Marrett and Mark Helper, students mapped and constructed cross sections of portions of Sheep Mountain Anticline and Goose Egg Dome. Our stay in the Big Horn Basin concluded with a one-day field trip into the Big Horn Mountains to examine the "thick-skinned" structural style of the range. A short trip to the west brought the class to Yellowstone and Grand Teton National Parks, where, while camped at Colter Bay, students spent two days examining the geology of Yellowstone caldera and the neotectonic



Right, Randy Marrett with class, first day of mapping, Sheep Mountain, Wyoming, summer 2004. Photo by M. Helper.



Student measuring bedding attitudes, Mowry Formation, Sheep Mountain, Wyoming, summer 2004. Photo by M. Helper.

Students examining an overturned fold in the Silver Hills Formation, Hecla, Montana, summer 2004. Photo by M. Helper.



Left, Randy Marrett presenting the annual Crayon Award to student David Kilventon for "negative innovations in map drafting." Lewis and Clark Caverns State Park, Montana, summer 2004. Photo by M. Helper.

and glacial history of the Jackson Hole region.

From the parks, the class traveled northwest to Dillon, Montana, where, working out of the dorms at the University of Montana Western, their focus again shifted to mapping. During their five-day stay, students studied and mapped complex geometries along the leading edge of the Montana segment of the Sevier fold-thrust belt. Four more days were allotted to a similar study farther north, out of a camp established at Lewis and Clark Caverns State Park near

Three Forks. Prior to this last mapping project, Dr. Marrett led a field trip through the Big Belt Mountains near Helena that contrasted the thick-skinned style seen earlier in the Big Horns with the thin-skinned features so beautifully displayed in a spectacular transect through the range.

Like many years in the recent past, field projects concluded with a final four-day exercise in the high Pioneer Mountains west of Melrose, Montana, that focused on the economic geology of the Hecla mining district, once the state's largest

silver producer. While primitive camping, students documented, mapped, and reported on relationships among deformation, metamorphism, mineralization, plutonism, and ore genesis. The project was preceded by visits in Butte to the Berkeley Pit and the Butte Mining Museum, where giant porphyry copper deposits, mining techniques, and reclamation were discussed. A three-day drive home allowed stops on the Snake River Plain near Idaho Falls, Idaho, on the Colorado Plateau at Price and Arches National Monument in Utah, and along the Rio Grande Rift in Albuquerque.

Further details and photos from this and previous years' classes can be found at the GEO660 Web site at <http://www.geo.utexas.edu/courses/660.html>.

GRADUATE DEGREES IN GEOLOGICAL SCIENCES

CONFERRED BY THE UNIVERSITY OF TEXAS AT AUSTIN, 2004-05

MASTER OF SCIENCE

August 2004 (6)

Carrie Ann Beveridge

B.S., 2001, The University of Texas at Austin
The origin and evolution of the Gran Desierto Sand Sea, Sonora, Mexico
Supervisor: Gary A. Kocurek
Committee members: Nicholas Lancaster, Clark R. Wilson

John Noel Hooker

B.A., 2000, The University of Texas at Austin
Fault timing in the Sierra Madre Oriental, Northeastern Mexico
Supervisor: Randall A. Marrett
Committee members: Stephen E. Laubach, Scott W. Tinker

Amy Anne McCole

B.S., 2000, University of Arizona
Seasonal water usage by Juniperus ashei: Assessment with stable isotopes of hydrogen and oxygen
Supervisor: Libby A. Stern
Committee members: Jay L. Banner, Bridget R. Scanlon

Melissa Edwards Pearson

A.B., 1999, Princeton University
Geochemical and isotopic tracing of Paleozoic groundwater flow in breached anticlines: A case study at Lower Kane Cave, Bighorn Basin, Wyoming
Supervisor: Philip C. Bennett
Committee members: Libby A. Stern, John M. Sharp, Jr.

Patrick Vaughan Wheatley

B.S., 2001, University of Tennessee
A calcium isotope growth series of the domestic chicken (Gallus gallus)
Supervisors: Christopher J. Bell, Libby A. Stern
Committee member: Timothy B. Rowe

Qianru Zeng

B.S., 2001, Beijing University
Temporal and spatial variability of snow cover as determined from data and models
Supervisor: Zong-Liang Yang
Committee members: John M. Sharp, Jr., Clark R. Wilson

MASTER OF ARTS

December 2004 (1)

Jesse Baldwin Kimball

B.A., 2002, Washington and Lee University
The reality and unreality of oil reserves, peak production, and prices
Supervisor: William L. Fisher
Committee members: Willem C. J. van Rensburg, Scott W. Tinker

MASTER OF SCIENCE

December 2004 (2)

Charles Hardy Gregory

B.A., B.S., Chemistry, 1953; B.S., Geological Sciences, 1996, The University of Texas at Austin
M.D., 1957, Columbia University
Subsurface meso-scale structural geology and petrology near Big Gossan ore body, Ertsberg (Gunung Bijih) Mining District, Irian Jaya, Indonesia
Supervisors: Mark P. Cloos, Randall A. Marrett
Committee member: Eric W. James

Kristine Lynn Mize

B.S., 2000, University of Illinois
M.S., Hydrogeology, 2002, Clemson University
Controls on the morphology and development of deep-marine channels, eastern offshore Trinidad and Venezuela
Supervisors: Lesli J. Wood, William L. Fisher
Committee members: William P. Mann, Scott W. Tinker

DOCTOR OF PHILOSOPHY

August 2004 (1)

Tarek Abu Serie Elshayeb

B.S., 1984, M.S., 1996, Cairo University
Integrated sequence stratigraphy, depositional environments, diagenesis, and reservoir characterization of the Cotton Valley sandstones (Jurassic), East Texas Basin, USA
Supervisor: Earle F. McBride
Committee members: Shirley P. Dutton, William E. Galloway, William L. Fisher, Robert H. Lander, Kitty L. Milliken

DOCTOR OF PHILOSOPHY

December 2004 (2)

Cem Okan Kilic

B.S., 1993, Istanbul University
M.S., 1998, The University of Texas at Austin
Characterization and quantification of middle Miocene reservoirs of Starfak and Tiger Shoal fields, offshore Louisiana, using genetic sequence stratigraphy and neural-networks
Supervisor: William L. Fisher
Committee members: William E. Galloway, Lesli J. Wood, Scott W. Tinker, Sergey Fomel

Armando Ruggiero Sena D'Anna

B.S., 1996, Universidad Central de Venezuela
Modeling and imaging of ground penetrating radar data
Supervisors: Paul L. Stoffa, Mrinal K. Sen
Committee members: Jakob Fokkema, Stephen P. Grand, Clark R. Wilson, Robert H. Tatham

MASTER OF ARTS May 2005 (1)

Coleman Daniel Lewis

B.A., 2003, The University of Texas at Austin
Prospects for coal and coalbed methane in the U.S. energy mix: Case study of the Greater Green River Basin
Supervisor: William L. Fisher
Committee member: Robert H. Tatham

MASTER OF SCIENCE May 2005 (14)

Trevor John Aitken

B.S., 2003, Brigham Young University
Cenozoic, stratigraphic, and tectonic history of the Grenada and Tobago Basins as determined from marine seismic data, wells, and onland geology
Supervisors: William P. Mann, Gail Christeson
Committee members: Paul L. Stoffa, Ronald J. Steel

Johnathan Roland Bumgarner

B.S., 2002, The University of Texas at Austin
Estimating biozone hydraulic conductivity in wastewater soil absorption systems using inverse numerical modeling
Supervisors: Bridget R. Scanlon, John E. McCray
Committee member: John M. Sharp, Jr.

Matthew Henry Davis

B.S., 2001, Tennessee Technological University
The tectonics of Tranquitas: A field study of rift through passive margin development and Laramide deformation in Triassic and Jurassic strata of the Sierra Madre Oriental, NE Mexico
Supervisors: Randall A. Marrett, Robert K. Goldhammer
Committee members: Charles Kerans, William L. Fisher, Kitty L. Milliken

Carmen Teresa Gomez

B.E., 2002, Universidad Simón Bolívar
Sensitivity of P-P, SH-SH, and P-SV seismic reflectivity to partial gas saturation
Supervisor: Robert H. Tatham
Committee members: Mrinal K. Sen, Robert J. Ferguson

David Luke Gorney

B.S., 2003, College of Charleston
Chronology of Cenozoic tectonic events in Western Venezuela and the Dutch Antilles based on integration of offshore seismic reflection data and onland geology
Supervisor: William P. Mann
Committee members: Gail Christeson, Paul L. Stoffa, Robert J. Ferguson

Lloyd Harrison Hemphill

B.S., 2001, University of Kansas
Hydrogeology of heterogeneous alluvium in the Leona aquifer, Caldwell County, Texas
Supervisor: John M. Sharp, Jr.
Committee members: Ronald J. Steel, Robert E. Mace

Richard Elliot Kilby

B.S., 2003, Washington and Lee University
Thrust kinematics in the lower Congo Basin, deepwater southern Gabon
Supervisors: Mark P. Cloos, Martin P. A. Jackson
Committee member: Randall A. Marrett

Jamie Sloan Levine

B.A., 2001, Carleton College
Structural analysis and detrital zircon provenance in the western Llano Uplift: Implications for a southern collider
Supervisor: Sharon Mosher
Committee members: William D. Carlson, James N. Connelly

Joseph Leo Mehring

B.S., 2002, The University of Texas at Austin
The origin of modern quartz arenite sands on beaches of the Florida panhandle
Supervisor: Earle F. McBride
Committee members: Robert L. Folk, William L. Fisher, Kitty L. Milliken

Brian Timothy Moore

B.S., 2003, The University of Texas at Austin
Sequence stratigraphic framework and systems tract analysis of lower Miocene shelfal clastic deposits: Redfish Bay area, Texas Gulf Coast
Supervisors: Robert G. Loucks, William L. Fisher
Committee members: Hongliu Zeng, Ronald J. Steel

Fabienne Michele Rambaud

B.A., 2001, The University of Texas at Austin
Nature and source of mineralizing fluids at the Presidio Mine, Shafter District, Presidio County, Texas
Supervisor: J. Richard Kyle
Committee members: Thomas Serenko, Libby A. Stern

Martha Patricia Serrano Perez

B.S., 1996, Universidad Nacional de Colombia
Integration of geological and petrophysical data in reservoir characterization of Pennsylvanian upper Morrow "C-sand" in Wilburton field, Morton County, Kansas
Supervisor: William L. Fisher
Committee members: Ronald J. Steel, Mark Ramsey

Sean Michael Sullivan

B.S., 2002, Appalachian State University
Geochemistry, sedimentology, and morphology of mud volcanoes, eastern offshore Trinidad
Supervisor: Lesli J. Wood
Committee members: William L. Fisher, William P. Mann, Robert H. Tatham

Kristin Miller White

B.A., 1993, The University of Texas at Austin
Hillslope seepage erosion, spring sapping, and knickpoint migration: Evidence of groundwater sapping middle Trinity aquifer, Honey Creek Basin, Comal County, Texas
Supervisor: John M. Sharp, Jr.
Committee members: Libby A. Stern, Paul F. Hudson

DOCTOR OF PHILOSOPHY May 2005 (4)

Dhananjay Kumar

B.S., 2000, Indian Institute of Technology
Analysis of multicomponent seismic data from the hydrate ridge, offshore Oregon
Supervisors: Mrinal K. Sen, Paul L. Stoffa
Committee members: Nathan L. B. Bangs, Stephen P. Grand, Robert H. Tatham, Robert J. Ferguson

Ki-Weon Seo

B.S., 1996, M.Ed. 1998, Seoul National University
Hydrological applications of gravity recovery and climate experiment (GRACE)
Supervisor: Clark R. Wilson
Committee members: Jay Famiglietti, John M. Sharp, Jr., Zong-Liang Yang, Jianli Chen

Mingjuan Shi

B.E., 1991, M.S. 1994, Ocean University of Qingdao
M.S., 1999, North Carolina State University
Characterizing heterogeneity in low-permeability strata and its control on fluid flow and solute transport by thermalhaline free convection
Supervisor: John M. Sharp, Jr.
Committee members: Craig Simmons, Alan R. Dutton, William E. Galloway, Zong-Liang Yang

Ronald Stephen Tykoski

B.S., 1995, University of Michigan
M.S., 1998, The University of Texas at Austin
Anatomy, ontogeny, and phylogeny of coelophysoid theropods
Supervisor: Timothy B. Rowe
Committee members: Christopher Brochu, James T. Sprinkle, Christopher J. Bell, David Cannatella

UNDERGRADUATE DEGREES IN GEOLOGICAL SCIENCES

CONFERRED BY THE UNIVERSITY OF TEXAS AT AUSTIN, 2004-05

BACHELOR OF ARTS December 2004 (4)

Kevin James Labbe
Edwardo David Martinez III
Laura Michelle Naski
Amina Ullah

BACHELOR OF SCIENCE December 2004 (14)

Zaid Z. M. Almusallan (Geophysics)
Wesley Dean Crawford—Honors, Special Honors in Geological Sciences
Patrick Thomas Fortson (Geosystems Engineering and Hydrogeology)
Adam Christopher Jackson (Geosystems Engineering and Hydrogeology)
Jeffrey Allen Marin (Geophysics)
Paul M. Mehring—Special Honors in Geological Sciences
Yusliza Mohd Sufian (Geophysics)
Sassan Mouri (Hydrogeology/Environmental)
Ted Alexander Phillips (Geophysics)
Daniel Gardner Stine (Geosystems Engineering and Hydrogeology)
Eric Mikael Swanson (Geophysics)
Brigitte Marie Wetzel (Teaching)
Michael A. Winston
Ana Louise York

BACHELOR OF ARTS May 2005 (3)

Randi Elizabeth Ashburn
Clayton Gerald Brollier
Abigail Watkins

BACHELOR OF SCIENCE May 2005 (10)

Norma Chaires (Hydrogeology/Environmental)
Ben David Herber
Christopher Alan Irle—Honors (Geosystems Engineering and Hydrogeology)
Isaac Euin Lim (Teaching)
Lindsay Marie Reeve (Hydrogeology/Environmental)
Christopher J. Rhea
Dietrich Bryce Sanders
Dominique K. Schmid—Special Honors in Geological Sciences
Diana Elizabeth Smith (Geophysics)
Susan Anna Young

BACHELOR OF SCIENCE August 2005 (11)

Raul Benavidez (Hydrogeology/Environmental)
John Daniel Deans
Samuel Bassett Enis (Hydrogeology/Environmental)
Matthew Allen Fornea (Geophysics)
Kristin Elaine Goddard (Hydrogeology/Environmental)
Tamara Naomi Kahn
Adam Lane Lambert
Christine Nicole Lunsford (Hydrogeology/Environmental)
Meredith Britt Mosley (Hydrogeology/Environmental)
Bryan Lee Parker
Katrina Helen Schulz



Undergraduate student Cristen Guest examines the polish on facets of a partially completed quartz gemstone. Photo by J. Jaworski, 2005.

INDUSTRY RECRUITING AT THE DEPARTMENT

The 2004–05 academic year was an eventful one for the Geological Sciences Placement Office, coordinated by Miriam Pashby. The office served 96 students who signed up for interviews with 25 companies. Of these students, 19 were candidates for B.S. or B.A. degrees, 53 for M.S. or M.A. degrees, and 24 for the Ph.D. degree.

The Placement Office survey that was returned by 67 of the interviewing students gives us some idea of industry hiring activity, as well as the number of successful placements for Jackson School students and graduates. The 67 students participated in a total of 254 interviews (some students had more than 8 interviews, but the average was around 3 per student). Full-time employment offers were made to 28 students, 16 of whom accepted, and 46 summer intern offers were extended, 26 of which were accepted. Although only about one-third of the interviews that took place resulted in an offer, more than half of those offers were accepted. Salaries vary widely, depending on the degree the student is seeking and whether the offer is for summer or full-time employment. Summer intern salaries range from

a minimum of \$2,500/month for a B.S. candidate to \$5,600/month for a Ph.D. candidate. Full-time salaries range from less than \$3,000/month for a student holding a B.S. or M.S. degree to \$6,500/month for a student entering the industry with a Ph.D.

THE FOLLOWING COMPANIES RECRUITED JACKSON SCHOOL STUDENTS, FALL 2004–SPRING 2005:

Amerada Hess	ExxonMobil
Anadarko	Marathon
Apache	Nexen
BP	Occidental
Burlington	Pioneer
ChevronTexaco	Samson
Computalog	Schlumberger
ConocoPhillips	Shell
Devon	Unocal
Dominion	URS
Encana	Veritas
ERM	Whitehead
Esenjay Exploration	



Part of the Jackson School of Geosciences graduating class of 2004–05.
Photo by J. Jaworski, 2005.



Left, Bill Fisher accepts a check from Austin Gem and Mineral Society member Kathleen Howard to support students, October 2004.



Left to right, *Melissa A. Halick, John A. Kolvoord, Paul M. Mehring (B.S., 2004), and Ben D. Herber (B.S., 2005)* each received \$750 scholarships from the Austin Gem and Mineral Society. They were recognized for their awards at the AGMS Dealer Dinner, held December 2004 in Austin.



Teaching assistant *Laurel Duncan* polishes a topaz gemstone. Photo by *J. Jaworski, 2005.*



Standing, fourth from right, *Bill Fisher* with his *Sequence Stratigraphy* graduate class on a field trip to Last Chance Canyon, New Mexico. Spring Break, 2005.

Front to back,
Geologists
Randy Marrett and
Leonel Gomez
(Ph.D. candidate)
with field assistant
Andy Gale examine
an outcrop of
Cambrian Flathead
sandstone beneath
the Buck Mountain
reverse fault, Teton
Range, Wyoming.

The goals of
the study are to
compare micro-
and macrofracture
patterns and to
document regional
and fault-related
fracture intensity
patterns. Photo by
S. E. Laubach.



BUREAU OF ECONOMIC GEOLOGY

Scott W. Tinker, Director

Letter from the Director



The Bureau of Economic Geology has continued to grow during the last year, and new programs and talent hold great promise for enhanced research opportunities. The Bureau research team conducted work for more than 100 sponsored projects totaling \$17.5 million in the annual budget. Key publications resulted from this work, and researchers were recognized with many professional awards.

We are proud to welcome several new members to the Bureau. Through the establishment of a new center, Dr. Michelle Foss and her staff from the former Institute for Energy, Law and Enterprise out of the University of Houston are now bringing that expertise to the Bureau as the Center for Energy Economics. Along with Foss, chief energy economist who heads the center, energy economist Dr. Gürcan Gülen and energy analysts Ruzanna Makaryan and Dmitry Volkov, as well as support staff, will strengthen the Bureau's capabilities to analyze energy markets worldwide. The Bureau has been a respected source of information for energy policy for decades and continues to serve as an advisor to state and national decision makers.

Furthering the Jackson School initiative on structural diagenesis, the Bureau added John Hooker to its research staff. John has worked with the Fracture Research and Application Consortium and will continue to study microfractures, applying CL techniques. Dr. Angela McDonnell will conduct basin analyses on the deep-shelf gas plays of the Texas State Waters in a new multidisciplinary study led by Drs. Bob Loucks and Shirley Dutton. Francisco Miranda, a postdoctoral fellow, will focus on seismic imaging and interpretation. Drs. David Pyles and Mark Tomasso have teamed up in the Laser-Assisted Analogs of Siliciclastic Reservoirs consortium, conducting outcrop-based studies using laser scanning technology to gather digital data for reservoir characterization.

A recent agreement with the Texas Commission on Environmental Quality (TCEQ) will make it easier to collaborate on projects that grow out of TCEQ's role as the state agency responsible for protecting our natural resources and maintaining clean air and water and the safe management of waste. Andrew Tachovsky, who specializes in environmental risk assessment, has joined the Bureau's environmental program to address these key TCEQ-funded programs.

At the federal level, the Bureau will play a major role in CO₂ sequestration research, led by Drs. Sue Hovorka and Ian Duncan. We are recent recipients of nearly \$9 million in combined state and federal competitive funding in this exciting new area. The Bush Administration has pledged its support of research to build clean-fuel technology as the energy source of the future. Texas—with its abundant hydrocarbon resources and heavy investment in recovery technology—has long been a natural site for enhanced oil recovery and exploration of new technology.

The core research centers—in Austin, Midland, and Houston—are thriving. Holdings and endowments have increased, a major technical library was added as a gift from Unocal, and outreach efforts have engaged support from the oil and gas industry to continue to preserve cores and cuttings, as well as to provide ancillary services for workshops and short courses.

Our neighborhood at the Pickle Research Campus is also growing. Soon the Bureau's south parking lot will give way to the foundation of a new building to house the Institute for Geophysics and the Texas Advanced Computing Center. Although the walk to the parking lot will be longer, we can all use the exercise, and we welcome the short walk across the common lobby and breezeway that will connect our buildings to make collaboration much easier.

The federated Jackson School is on the near horizon. I would like to acknowledge the wise guidance of University President Larry Faulkner throughout the process. He will be missed greatly. The Bureau looks forward to working with the new dean and helping to build the legacy that Jack and Katie Jackson envisioned as a top-ranked geoscience school that would impact Texas citizens in the application of geosciences and create a laboratory for learning about Earth's natural resources. It would seem that the show is, at last, almost on the road.

I have a busy year ahead. In addition to my ongoing Bureau, Jackson School, Petroleum Technology Transfer Council, and lecture commitments, I am serving as President Elect of the Association of American State Geologists, touring as the AAPG International Distinguished Ethics Lecturer, leading the effort to attract the \$1 billion FutureGen project to Texas, and trying to finalize efforts to form a major new research program in the area of nanotechnology and energy.

Days are filled, but the great folks at the Bureau make them fun.

Scott W. Jinker

Research Overview

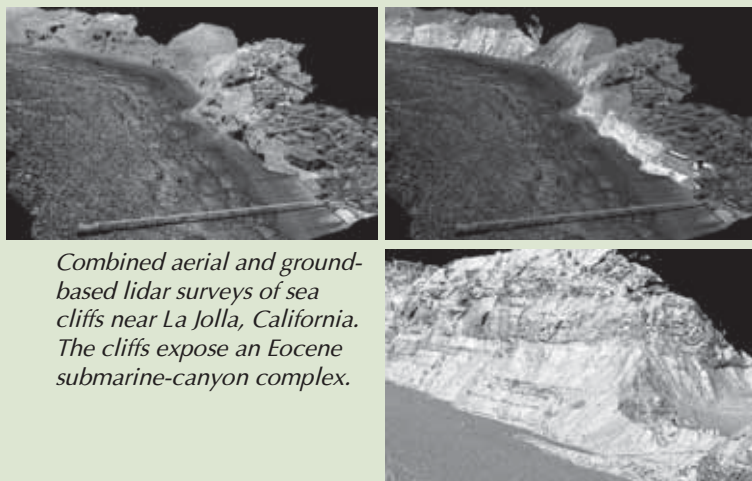
Clastic and Carbonate Research

RCRL. The 17-year-old **Reservoir Characterization Research Laboratory** is a global leader in carbonate reservoir systems research led by Charles Kerans and F. Jerry Lucia and comprising team members Jerome Bellian, Xavier Janson, James W. Jennings, Jr., and Hongliu Zeng and graduate research assistants. They are leaders in the pioneering effort to acquire digital outcrop data using lidar laser technology. RCRL study areas include Texas, Australia, Italy, and the Middle East.

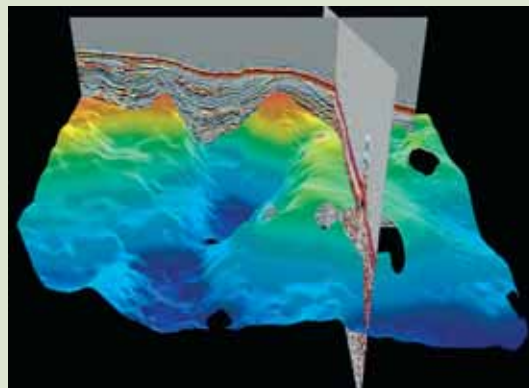
LASR. **Laser-Assisted Analogs of Siliciclastic Reservoirs** is an industrial associate research program begun in 2004 by David Jennette. The staff now includes David Pyles (co-principal investigator), Florence Bonnaffe, Renaud Bouroullec, and Mark Tomasso. LASR's mission is to develop stratigraphic concepts and teaching tools that can be used to address stratigraphic problems faced by geologists

in the petroleum industry. Research is outcrop based and currently focused on characterizing submarine-fan outcrops; research into deltaic, shoreface, and fluvial systems will begin in 2006. A key component of this research is the lidar laser scanner, which is enabling LASR and RCRL researchers to help pioneer the collection and integration of digital outcrop data to produce detailed outcrop characterizations.

QCL. The **Quantitative Clastics Laboratory** program is focused on the quantitative analysis of clastic systems morphology and development on continental margins. The program, led by Lesli J. Wood, includes



Combined aerial and ground-based lidar surveys of sea cliffs near La Jolla, California. The cliffs expose an Eocene submarine-canyon complex.



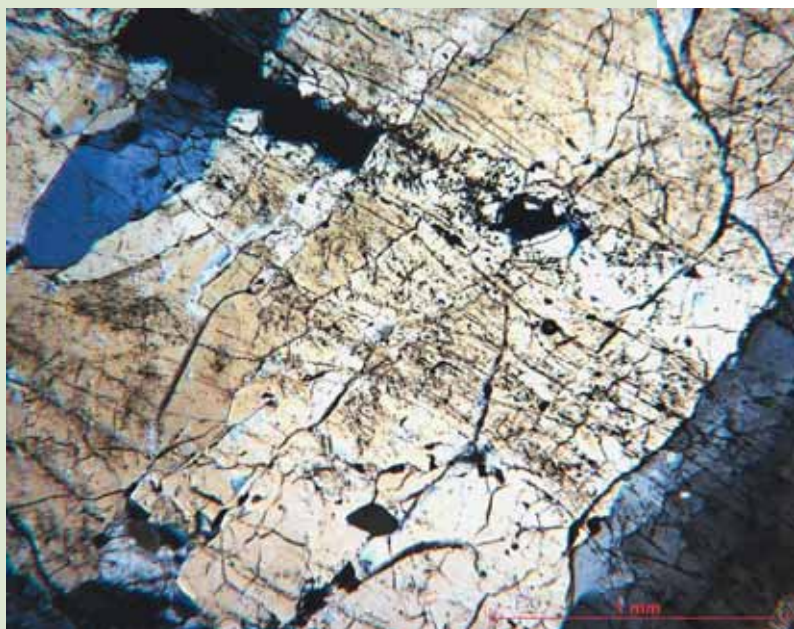
Three-dimensional paleotopography of a large shelf-edge canyon located in eastern offshore Trinidad. This canyon is sourcing an enormous mass transport complex in deep water. Seismic lines through the canyon show chaotic moderate-to high-amplitude material filling the canyon. Sandy, shelf-edge deltas were the source for much of this proximal fill. GeoProbe® is used by the QCL to integrate and investigate high-quality mega-merge seismic data sets for investigation of margins worldwide. View is up canyon, to the east. Data provided by the Ministry of Energy and Energy Industries of Trinidad and Tobago. The Bureau acknowledges support of this research by Landmark Graphics Corporation via the Landmark University Grant Program.

technical specialist John Andrews and graduate research assistants. The program involves the use of geographic information systems and visualization tools in quantitative seismic geomorphologic analysis of mega-3D seismic data from around the world to produce input into geologically realistic reservoir models and reduce uncertainty in a range of exploration and development settings.

Deep Shelf. In 2004 co-principal investigators Shirley P. Dutton and Robert G. Loucks, with research staff L. Frank Brown, Angela McDonnell, and Shinichi Sakurai, began a multidisciplinary study titled “Deep-Shelf Gas Plays of Texas State Waters.” The focus of this research is the deep-shelf gas region in the Gulf of Mexico, where target reservoirs occur at depths of 15,000 to 30,000+ feet beneath the shallow waters of the inner shelf. The goal is to stimulate participation in the deep-shelf gas plays by reducing risk in key technical areas of stratigraphic architecture and reservoir quality in Texas State Waters.

Structure Research

AGL. The mission of the 17-year-old **Applied Geodynamics Laboratory** is to produce innovative concepts in salt tectonics—and AGL researchers have profoundly influenced the understanding of salt tectonics and have developed much of the genetics and descriptive terminology now used throughout the world. AGL is led by co-principal investigators Martin P. A. Jackson and Michael Hudec and is staffed by Timothy Dooley, Lesli Wood,



Transmitted-light image of crack-seal texture in quartz in a fracture from an East Texas tight gas sandstone. Unraveling the kinematic evidence from such structures is helping FRAC researchers predict where fractures in the subsurface have porosity and can contribute to fluid flow.

consultants Peter Cobbold, Daniel Orange, Daniel Schultz-Ela, and several graduate research assistants. Research goals include developing a conceptual framework for the full range of salt tectonics using seismic-based mapping, structural-stratigraphic analysis, and physical and mathematical modeling. Research results are shared with sponsors via an HTML-based interactive CD-ROM titled *The Salt Mine—An Interactive Atlas of Salt Tectonics*, the most comprehensive collection of salt-tectonic images and animations ever assembled.

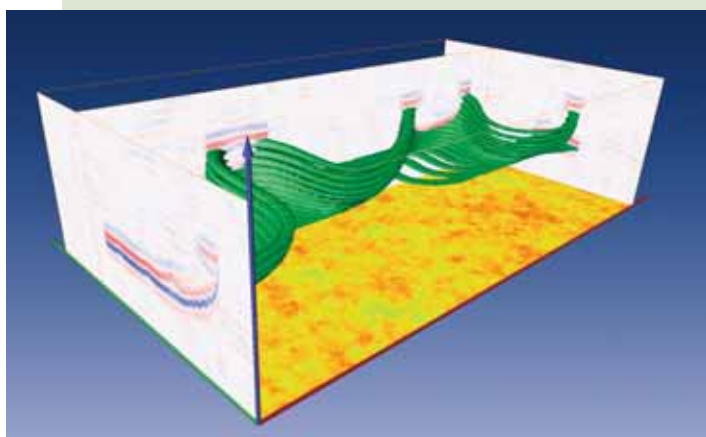
FRAC. The **Fracture Research and Application Consortium** is an alliance of scientists from the Bureau and the departments of Petroleum and Geosystems Engineering and Geological Sciences that seeks fundamental understanding of fractures and fracture processes. FRAC is dedicated to conquering the challenges of reservoir fractures. The research team, led by co-principal investigators Steve Laubach, Jon Olson (PGE), and Randy Marrett (DGS), includes Julia Gale, Jon Holder (PGE), Kitty Milliken (DGS), Sergey Fomel, Rob Reed, John Hooker, and graduate research assistants. The ultimate goal of this research is to improve efficiency and success of hydrocarbon exploration and production.



Recumbent sheath folds in the southern salt glacier of Kuh-e-Namak (Dashti) in the Zagros foreland of southwestern Iran. Photo by Martin Jackson.

Imaging Modeling

EGL. Geophysics research at the Bureau is organized around the **Exploration Geophysics Laboratory** that is staffed by Bob A. Hardage (principal investigator), Milo Backus, Michael DeAngelo, Sergey Fomel, Khaled Fouad, Bob Graebner, Paul Murray, Randy Remington, Paul Sava, and Diana Sava. The EGL develops a wide range of technologies, including seismic field-recording techniques and data-processing and data-interpretation procedures, to image reservoirs using all components of the seismic wavefield. This technology is designed to improve reservoir characterization and prospect evaluation.

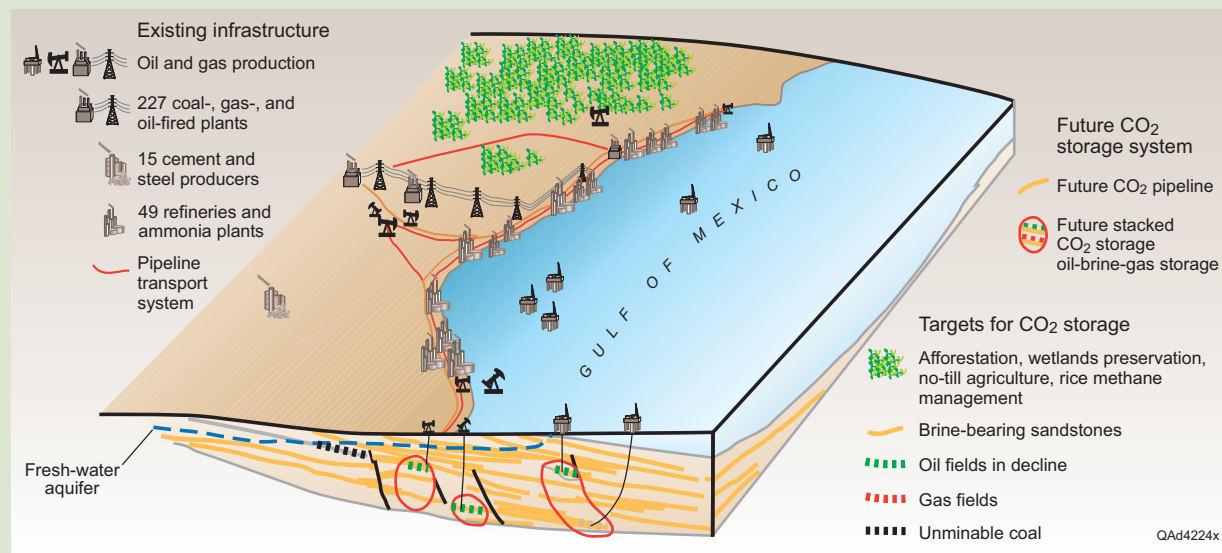


Deep-water channelized sandstone model with 30-Hz 3-D exploding reflector forward seismic simulation generated by FRST researchers.

FRST. Fluid-Rock-Seismic Technology is an integrated geological, geophysical, and engineering research partnership led by James W. Jennings, Jr., and staffed by Sergey Fomel, Mrinal K. Sen (Institute for Geophysics) and Mark Tomasso. Research goals include the development and testing of more fully integrated approaches and workflows that combine sedimentology, stratigraphy, rock properties, fluid-flow modeling, seismic-data acquisition methods, and advanced forward seismic modeling based on relevant outcrop analogs.

CO₂

GCCC. The **Gulf Coast Carbon Center**, formed in 2003 and led by Ian Duncan and Susan Hovorka, comprises a wide range of industry partners, collaborators, and stakeholders working together to conduct technical studies focused initially on subsurface storage of CO₂ in the U.S. Gulf Coast. Its mission is to be a bridge between science, markets, and policy, and to facilitate development of a CO₂ sequestration industry in the United States. GCCC is extending its reach through participation in two regional partnerships—the Southeast and Southwest—funded by the U.S. Department of Energy (DOE). One of several ongoing projects is the Frio Brine Pilot Experiment, which involved injecting a small volume of CO₂ into a well-characterized portion of the Frio sandstone in the subsurface of South Liberty oil field and then closely monitoring the



Convergence of multiple sources and multiple sinks, beneficial use for enhanced oil recovery, and a well-understood geology with existing infrastructure make the Gulf Coast an optimal location in which to undertake large-volume CO₂ storage.



Lawrence Berkeley National Laboratory researchers Barry Freifeld and Paul Cook supervise installation of the "U-tube," a device for extracting high-frequency uncontaminated two-phase samples from 1,500-meter reservoir depths at the Bureau's Frio brine pilot site. The experiment objective is to collect data at high temporal and spatial resolution to demonstrate the accuracy of numerical simulations of CO₂ injection to give confidence that predictions are viable for very large volume injection that would be required to reduce atmospheric buildup of CO₂.

well to calculate rates of migration up dip. CO₂ was injected in October, and monitoring of the two wells continues today. GCCC Bureau staff includes Mark Holtz, Shinichi Sakurai, Seay Nance, and Rebecca Smyth.

DOE Los Alamos Partnership. GCCC researchers have teamed up with the Los Alamos National Laboratory in a proposal to the DOE to make use of the opportunity presented by current, large-scale CO₂ injection operations in the Permian Basin fields of West Texas. The goal of this research is to better predict the permanence of subsurface CO₂ storage in various saline-reservoir geologic sequestration schemes that are being considered as part of the U.S. response to global climate change.

Southwest Regional Sequestration Partnership. The GCCC has collaborated with the Southwest Regional Sequestration Partnership in a proposal to the DOE to characterize and monitor a new CO₂ flood operation in part of the Canyon Reef oil play in West Texas. The target of the CO₂ tertiary recovery operation is the Claytonville Canyon Lime reservoir, which has never been subjected to a CO₂ flood and which lies below a saline aquifer. It is an excellent opportunity to monitor CO₂ movement

because saline aquifers overlying a CO₂ injection zone are probably where CO₂ leaking from an injection zone will accumulate.

Southeast Regional Sequestration Partnership. This collaboration with the Southeast Regional Sequestration Partnership centers around a proposal to DOE for a Stacked Storage Project that targets CO₂ sequestration storage units that lie along the Gulf of Mexico coast in a stacked sequence of hydrocarbon and brine reservoir intervals. Key research issues include CO₂ interaction with faults, pressure distribution before and after injection, near-surface monitoring of wetlands, and the impact on regional fluid flow.

FutureGen. The Bureau has been asked to take the lead for Texas in preparing a response to a forthcoming DOE Request for Proposal for states interested in hosting President Bush's \$1 billion, 10-year, clean-coal funding initiative called FutureGen. FutureGen technology is intended to become an integral part of the energy industry over the next few decades by incorporating power production with chemical production, using coal in innovative and cleaner ways, enhancing oil production with CO₂ injection, producing hydrogen, and improving air quality by sequestering CO₂.

Center for Energy Economics

On June 1 the Bureau welcomed the new Center for Energy Economics to its growing research program. The Center, formerly the Institute for Energy, Law and Enterprise at the University of Houston, is directed by



CEE staff, from left, Natalie Silva, Aisha Hanif, Dr. Gürcan Gülen, Dr. Michelle M. Foss, Ruzanna Makaryan, and Dmitry Volkov. Photo by David M. Stephens.

Dr. Michelle M. Foss. Center staff joining the Bureau are researchers Dr. Gürcan Gülen, Ruzanna Makaryan, and Dmitry Volkov and support staff Aisha Hanif and Natalie Silva. Although the group will remain in Houston, the Bureau will support their research, computer, media, and human resource needs.

Since 1991, Dr. Foss and her team have built an interdisciplinary, university-based center of excellence providing research, training, and outreach on energy economics and markets; policy and regulatory frameworks for commercial investment; and training and capacity building for energy-sector reform and related institutional development. Its mission is *to educate stakeholders on energy economics and commercial frameworks using comparative research to facilitate energy-sector development*. The Center network brings together more than 100 experts and thousands of years of industry and government experience drawn from senior professionals from corporate and government sponsors, international advisory boards, research fellows, graduate student research assistants, and visiting scholars.

The Center focuses its research on the economic fundamentals of the energy value chains and linkages to commercial frameworks; the role of government and policy and regulatory models for commercial energy development; business/government interactions; and strategic responses to more competitive energy markets. The Center's proven model for all its research derives from working with corporate and government partners to help set priorities with balance assured through the Center's network of advisors.

Partnering with National Labs

Researchers throughout the Bureau are partnering with several national laboratories to conduct research, write collaborative proposals, and build future alliances. Researchers with the Bureau's Gulf Coast Carbon Center are long-term partners with Lawrence Livermore National Laboratory, Lawrence Berkeley National Laboratory, and Los Alamos National Laboratory regarding CO₂ sequestration research and pilot projects. Efforts are under way between Sandia National Laboratory and The University of Texas at Austin to develop areas of long-term research collaboration. One area of funded collaboration

that was developed by the Bureau in partnership with Petroleum Geosystems and Engineering and the Institute for Computational Engineering and Sciences involves dynamic reservoir monitoring and simulation. The Bureau is also developing research collaborations with both Sandia and Los Alamos National Labs for studies related to water resources.

Water Research

Hydrologic Observatories. In 2001 the National Science Foundation (NSF) established the Consortium of Universities for the Advancement of Hydrologic Sciences, Inc. (CUAHSI), to establish a hydrology infrastructure. CUAHSI currently has about 100 member universities and includes several programs across the United States. The NSF seeks to fund 10 digital watersheds within the United States and directs CUAHSI to integrate with the NSF Collaborative Large-scale Engineering Analysis Network for Environmental Research (CLEANER) program.

Bureau researcher Bridget Scanlon and researchers from Texas State University, The University of Texas at Austin, The University of Texas at San Antonio, Texas A&M University, and other member universities have been collaborating on a proposal for the Texas Hydrologic Observatory (HO) program, which includes the Guadalupe, San Antonio, and Nueces basins, and coastal bays and estuaries. The proposed Texas HO has many unique attributes: dynamic aquifers that respond rapidly to variations in climate forcing and land use; strongly linked surface- and ground-water systems; contrasting watersheds; frequent hydrologic extremes; strongly coupled hydrologic and biologic systems including many endangered species; and water quantity and quality issues associated with bays and estuaries. This program should advance our understanding of hydrologic processes and enable development of sustainable water programs in this region to respond to human and ecosystem needs.

Sustainable Water Development. Developing sustainable water programs within the context of climate variability and land use/land cover change is a critical issue for the 21st century. Bureau researchers, led by Bridget Scanlon and Ian Duncan, co-principal investigators, have developed a broad research program to address the issues of water quantity and quality.

River deltas and the deposition of sediments played an important role in the formation of the Gulf of Mexico and its vast natural resources, as visualized in this scene from the video “Texas: The Underground Story—The Origin of Texas Oil and Natural Gas,” created in partnership with the Houston Museum of Natural Science.



Reconstructed Jurassic-age paleogeography of the Texas Gulf Coastal Plain created for the Houston Museum of Natural Science Weiss Energy Hall exhibit.



A large component of the program involves addressing linkages between ecology and hydrology and assessing impacts of current and projected future land use/land cover changes on the water cycle. Although much of the research will be conducted in Texas, there will also be an international component to address water sustainability issues worldwide, particularly in semiarid and arid regions where water scarcity problems are greatest. Findings from this research should provide valuable information to water managers to develop sustainable water management programs to meet human and ecosystem needs.

Museum Outreach

Bob Bullock Museum. “Drawn from Experience: Landmark Maps of Texas” is the name of an exhibit that was open from February 19 to June 5 at the Bob Bullock Texas State History Museum in Austin. Researchers and media staff produced two short movies for the exhibit that introduce visitors to the modern mapping tools lidar (light detecting and ranging) and GIS (Geographic Information Systems). The exhibit traces the evolution of the shape of Texas through 500 years of mapmaking, from the 16th century to the present day.

Houston Museum. “Texas: The Underground Story—The Origin of Texas Oil and Natural Gas” is the title of a seven-minute video created by Bureau researchers and media staff that was installed as the centerpiece animation for the renovated Weiss Energy Hall exhibit at the Houston Museum of Natural Science. The video, constructed with detailed 3-D models and 2-D animations and graphics, takes the viewer from the onset of the Triassic rifting to the present day and offers the museum’s nearly 2 million annual visitors a peek at the varied and complex geology that lies beneath the coastal plain.

Witte Museum. “World of Water at the Witte” is the title of a new exhibit at the Witte Museum in San Antonio open until September 5. It is an interactive, hands-on exhibit full of fun and learning experiences that illustrates the history of water use in South Texas, a cornerstone of which is a 3-D simulation of a journey through an underground aquifer created by Bureau researchers.

Special Mention

U.S. Congressman Michael McCaul, representing Texas' 10th District, and members of his staff visited the Bureau in June to hear two presentations on future energy issues. BEG Director **Scott Tinker** discussed fossil energy and related environmental issues, and **Arumugam "Ram" Manthiram** of UT's Mechanical Engineering Department discussed fuel cell research.



Bureau coastal researcher **Jim Gibeau** was interviewed on Fox 7 News for a July 10 story titled "UT Using New Storm Technology." In the interview Jim explained the emerging technology of lidar, which will help Texans prepare for hurricanes.

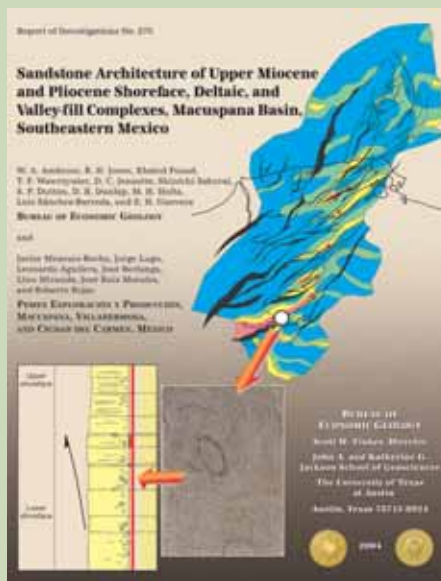
The Bureau's **Coastal Studies Group** is using its airborne lidar instrument to create highly detailed and accurate topographic maps of beaches and dunes. These unprecedented topographic data sets can help pinpoint areas where the coast is most vulnerable to the effects of waves and storm surge.

On a three-day excursion in June 2005, researchers from the **Reservoir Characterization Research Laboratory (RCRL)** and consultants drilled two 25-foot-deep wells into the Glen Rose Formation at the Pipe Creek Reef near Boerne, Texas. The scientists were preparing to test the permeability of a vuggy caprinid debris deposit. The test, conducted July 1, involved placing a vacuum pump at one well and observing pressure changes at a second well located five feet away. Further testing is planned. This research—the first of its kind by RCRL—is funded by the National Science Foundation and is a collaborative project by RCRL researchers **Jim Jennings** and **Charlie Kerans**, **Steven Bryant** at UT's Petroleum and Geosystems Engineering, and **Todd Arbogast** of UT's Department of Mathematics. INTERA assisted researchers in planning and designing the wells. Drilling and well installation were conducted by environmental drilling specialists at Straub Corporation. Landowners Mark and Alice Anderson graciously allowed access to their property.

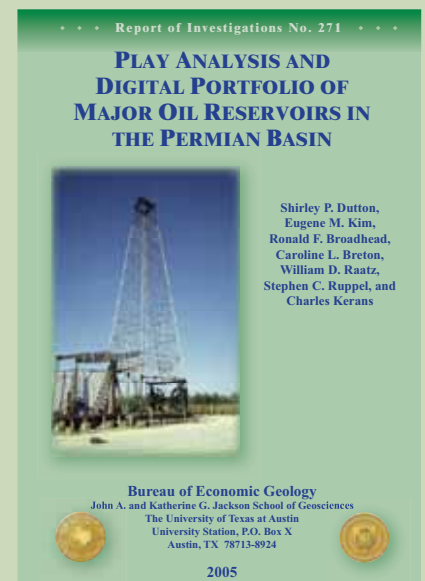


Left to right: *Members of Rep. Michael McCaul's staff Gene Irisari (Deputy Chief of Staff/Legislative Director) and Victoria Miller (Director of Field Operations); Dr. Juan Sanchez (UT Vice President for Research), Representative McCaul, Dr. Scott Tinker, and Dr. Arumugam "Ram" Manthiram.*
Photo by David M. Stephens.

Researchers at the **Bureau of Economic Geology** and the **New Mexico Bureau of Geology and Mineral Resources** have completed a new digital oil-play portfolio of the prolific Permian Basin of west Texas and southeast New Mexico. This portfolio, developed as part of DOE's PUMP program, will soon be available on CD as Report of Investigations No. 271, *Play Analysis and Digital Portfolio of Major Oil Reservoirs in the Permian Basin*. In an effort to increase reserves and improve recovery of oil from existing reservoirs in the Permian Basin, the portfolio defines 32 oil plays in the Permian Basin and assigns all significant-sized reservoirs that had cumulative production of more than one million barrels through 2000 to a play. All reservoirs and plays are mapped in a Geographic Information System (GIS).



William A. Ambrose and colleagues presented a framework for delineating upper Miocene and Pliocene gas plays in the Macuspana Basin of Mexico in a new Report of Investigations published by the Bureau (RI 270).



Shirley P. Dutton is the senior author of a new digital portfolio of oil plays in the Permian Basin (RI 271).

New People



Michelle Foss, Program Manager, joined the Bureau in June as the Chief Energy Economist and head of the Center for Energy Economics.

She holds a Ph.D. with honors in political science from the University of Houston (1995), an M.S. in mineral economics from Colorado School of Mines (1985), and a B.S. in biology, with a geology minor, from the University of Louisiana at Lafayette (1976). Michelle was the Executive Director of the Institute for Energy, Law and Enterprise at the University of Houston from 1991 to 2005.



Gürcan Gülen is a new Social Science/Humanities Research Associate V at the Bureau, with the working title of Senior Energy

Economist. Gürcan has a Ph.D. in economics from Boston College (1996) and a B.A. in economics from Boaziçi (Bosphorus) University, Istanbul, Turkey (1990). Prior to coming to the Bureau, Gürcan worked at the Institute for Energy, Law and Enterprise, University of Houston Law Center (2002–05), and the Energy Institute, Bauer College of Business, University of Houston (1997–2002).



John Hooker has joined the Bureau as a Research Scientist Associate II, and he will be working on the Jackson School of Geosciences Structural

Diagenesis initiative. Fresh from a graduate research assistantship for the Fracture Research and Application Consortium, John received his M.S. in geology from The University of Texas at Austin in 2004 and his B.A. in 2000. His research interests include microfracture scaling in sedimentary rocks and using cathodoluminescence to study provenance and deformation history of quartz grains.



Ruzanna Makaryan is a new Social Science/Humanities Research Associate IV at the Bureau. Her working title is Energy Analyst. She has an

MBA from the University of Houston, C. T. Bauer College of Business (2003) and a B.A. in linguistics from Turkmen State University, Turkmenistan (1997). Ruzanna was a researcher at the Institute for Energy, Law and Enterprise, University of Houston Law Center from 2002 to 2005.



Angela McDonnell, new Research Associate, holds a B.S. degree from University College Cork, Ireland (1995), and M.S. (1996) and Ph.D.

(2001) degrees from University College Dublin. Angela's principal interests include seismic interpretation, sequence stratigraphy, and seismic facies analysis.



Francisco Miranda is a new Postdoctoral Fellow with a Ph.D. in physics from the University of Houston (2004). Francisco also has a B.S.-M.S.

degree in physics from the Universidad Complutense, Madrid, Spain (1999), and a B.S.-M.S. degree in industrial engineering from Escuela Técnica Superior de Ingenieros Industriales (1999), Madrid. Francisco's research interests include seismic imaging and inversion, inverse scattering theory, and wave theory.



Postdoctoral Fellow **David Pyles** joined the Bureau after receiving his Ph.D. in geology from the University of Colorado at Boulder in June 2004. David's

M.S. degree in geology is from the Colorado School of Mines (2000); his B.S. degree in geology is from California State University, Chico (1997); and

his A.S. degree is from Riverside Community College (1994). David's research interests include stratigraphy, sedimentology, clastic facies analysis, and seismic data interpretation.



Andrew Tachovsky is a new Research Scientist Associate working under Bridget Scanlon. Andrew has a B.S. in civil engineering from the University

of Virginia (1995) and an M.S. in civil engineering from The University of Texas at Austin (1997). His areas of expertise include environmental risk assessment and geologic modeling.



Mark Tomasso is a new Research Associate from the University College in Dublin. Mark has a Ph.D. in geology from the University

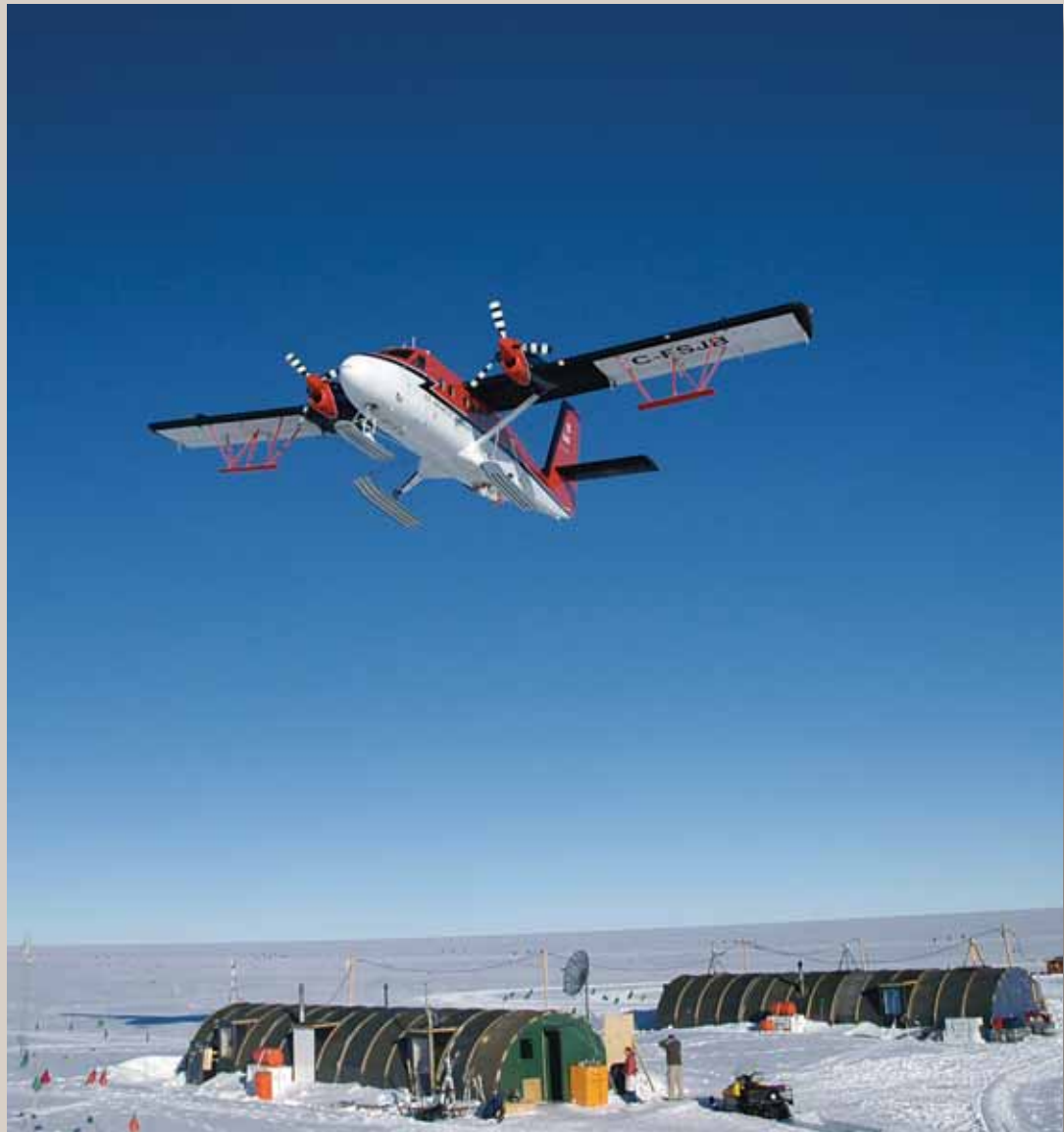
of Birmingham (2001) and a B.Sc. in geology from Royal Holloway, University of London (1997). Mark's research interests are deep-water clastic sedimentology, stratigraphy, reservoir modeling, and seismic interpretation.



Dmitry Volkov is a new Social Science/Humanities Research Associate III at the Bureau, with the working title of Junior Energy Analyst. He has

an MBA from the University of Houston (2005) and a B.S. in oriental studies from Moscow State University, Moscow, Russia (2000). Dmitry was a researcher at the Institute for Energy, Law and Enterprise, University of Houston Law Center, from 2003 to 2005.

UTIG equipped aerogeophysical Twin Otter over Thwaites Camp, West Antarctica, home to 12 UTIG scientists, graduate students, and field assistants during the field season December 2004–January 2005. UTIG investigators have been developing and applying aerogeophysical techniques to address a wide range of research topics in Antarctica since 1991. Photo by Matthew Fields-Johnson, January 2005.



INSTITUTE FOR GEOPHYSICS

Paul L. Stoffa, Director

Letter from the Director



In May 2005, The University of Texas Board of Regents approved a new “home” for the Institute for Geophysics (UTIG) and the Texas Advanced Computing Center (TACC) at the J. J. Pickle Research Campus. The new facility will provide new offices and a state-of-the-art computer machine room for TACC and, thanks to the support of the Geology Foundation, will bring UTIG onto campus as a whole unit for the first time since its move to Austin from Galveston in 1982. The new facility, a three-story, 90,000-square-foot building that will be located next to the Bureau of Economic Geology, will encourage collaboration within the Jackson School of Geosciences and allow the UTIG research staff to take advantage of the computational and analytical resources of TACC.

For more than 30 years UTIG has been internationally recognized as a leading academic research institution in geology and geophysics. Our scientists maintain a successful track record in receiving funding from the National Science Foundation (NSF), the National Aeronautics and Space Administration (NASA), the Office of Naval Research (ONR), and industry. One NSF grant from the Office of Polar Programs supported the largest Antarctic field project ever—an airborne geophysical survey of the Amundsen Sea Embayment carried out in collaboration with the British Antarctic Survey during the austral summer of 2004–05. The human effort required to acquire useful geophysical data in such a remote region of Antarctica is enormous. However, the geophysical results obtained are a uniquely important resource for the entire scientific community studying climate change.

During the past year, UTIG completed five successful research cruises. One UTIG-led scientific cruise on the research vessel (R/V) *Maurice Ewing* in the spring of 2005 succeeded in collecting seismic reflection and refraction data over the offshore portions of the 65-million-year-old Chicxulub impact crater, the largest impact structure on Earth caused by an asteroid or meteorite. UTIG scientists also led or participated in research cruises to study tectonic processes offshore Nicaragua, offshore Venezuela, and at the Blanco Fracture Zone in the Pacific, and to investigate the interplay between climate and tectonics in the Gulf of Alaska.

After three years of development effort, UTIG’s new Processed Seismic Data Center (PSDC) is fully operational. The PSDC, which is a part of the national Marine Geoscience Data System, provides tools and database services for academic scientists to share processed seismic reflection data. The PSDC is supported by grants from the NSF and the Jackson School of Geosciences.

UTIG continues to involve students in our research programs and encourages them to use the data acquired for their dissertations and theses. In 2004–05 UTIG researchers supervised or co-supervised with faculty in the Department of Geological Sciences 21 graduate students, 6 of whom received advanced degrees. UTIG projects also supported 11 undergraduate research assistants.

We continue to benefit from our industry contacts and support. Several ex-UTIG students have returned to UTIG as company representatives to visit and recruit our students. The Gulf Basin Depositional Synthesis project (GBDS) continues with support after 10 years, and a new Caribbean Regional Synthesis project is just beginning with industry support. Our Ocean-Bottom Seismology (OBS) staff and equipment are working on a collaborative project supported by GX Technology in West-Central Africa.

We also engage in public outreach efforts aimed at several audiences, including the media, the K–12 community, and industry scientists. In the past year reporters interviewed UTIG scientists on topics including gas hydrates, abrupt climate change, the Asian tsunami, and moonquakes; these interviews provided material for news articles that appeared in *Geotimes*, the *Guardian*, the *Boston Globe*, and the *New York Times*. Recently UTIG scientists sailed with an international group of science experts on a cruise exploring the site of the December 26, 2004, Asian tsunami. This cruise will be the subject of a global two-hour documentary special, *Journey to the Heart of the Tsunami*, which will be broadcast on the Discovery Channel in the United States in late autumn 2005.

One particularly important feature of the past year is that the Jackson School of Geosciences (JSG) has become fully operational; thus, at UTIG we are now experiencing the very positive benefits of being a JSG member. This year, 10 UTIG research scientists were elected as JSG Research Fellows, an honor accompanied by funding that enables recipients to enhance and expand their research programs. In addition, UTIG scientists were awarded \$1,972,000 in JSG matching funds for enhancing projects supported by external funding sources. They also received \$138,000 in equipment matching funds and \$50,000 for postdoctoral support.

This year has been particularly significant in terms of the number of research cruises successfully completed and the scale and relevance of the aerogeophysics program in Antarctica. This coming year, UTIG scientists will concentrate on interpreting the data acquired, publishing their findings, and preparing for their next round of expeditions.

Paul L. Stoffa

Research Overview

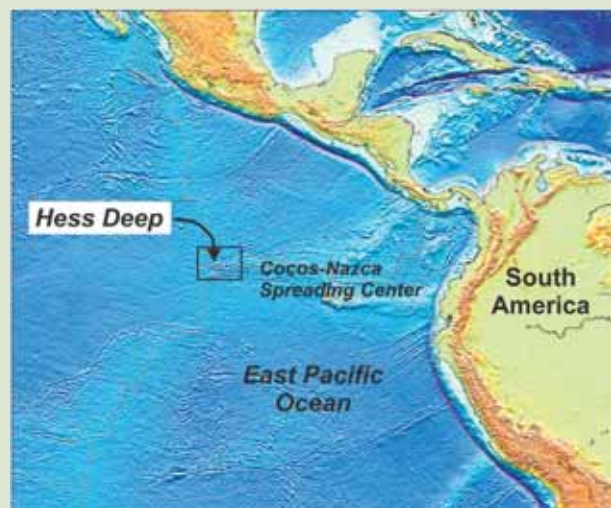
Dedicated to both basic and applied research, the Institute for Geophysics (UTIG) conducts research that advances our fundamental understanding of the dynamic geophysical processes that influence Earth's structure and climate and the distribution of potential energy reserves. The science and activities highlighted in this newsletter reflect another year of outstanding research accomplishments and multiple field campaigns that convey the breadth of the expertise of UTIG's research staff.

Despite setbacks linked to concerns about the potential impact of marine seismic data acquisition on the well-being of marine mammals, we have completed a successful year of five seagoing investigations aimed at understanding geologic processes along oceanic plate boundaries and at continental margins. The formation, break-up, and dispersal of continents are of particular interest to UTIG scientists because they are the main processes that affect Earth's surface geology and produce some of the planet's most dramatic geologic features. These processes—which can also produce cataclysmic phenomena such as earthquakes and tsunamis—govern the occurrence and distribution of minerals, influence climate, and are fundamental to life on Earth.

OCEANIC CRUST makes up two-thirds of Earth's surface. It is formed at mid-ocean ridges, the largest volcanic system on our planet, and is eventually consumed at major earthquake-generating trenches. The oceanic crust has been studied by geophysicists and geologists for many years—geophysicists using remote sensing techniques such as seismic exploration, and geologists collecting samples and making observations. Geologists and geophysicists, however, are often at odds over the basic definitions of crustal structure. Seismic methods can probe deeply into the crust and gather data over great

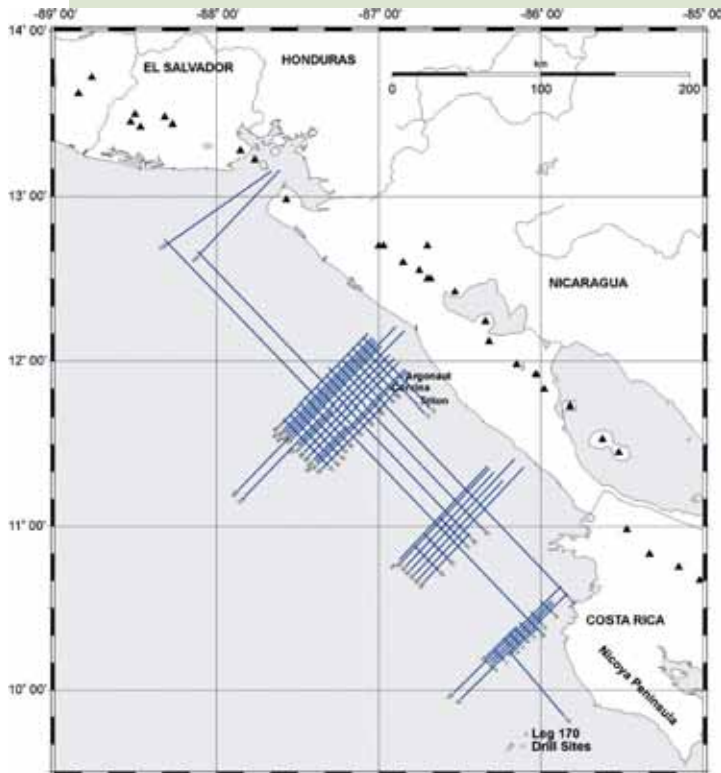
distances, but the interpretation of results is usually by inference. Geologic methods provide direct evidence from observations but are limited by the few outcrops and drill holes where samples from the crust can be collected, and by the limitations of observing outcrops with submersibles.

Marine geophysical cruises to the Hess Deep (2003) and the Blanco Fracture Zone (2004) sought to reconcile these two views of oceanic crust by making a direct comparison between seismic interpretations and geologic mappings of oceanic crustal structure at both locations. Ocean crust formed at the fast-spreading East Pacific rise is exposed at Hess Deep. The Blanco Fracture Zone lies off the western coast of Oregon and is a transform segment of the plate boundary between the Pacific and Juan de Fuca plates, linking the Juan de Fuca and Gorda spreading ridges. Here ocean crust is exposed that formed nearby to



UTIG scientists collected seismic reflection and refraction data on the plateau adjacent to the Hess Deep. The purpose of the seismic survey is to generate a "picture" of the structure of Earth's crust at Hess Deep.

the northwest at an intermediate rate of spreading. In late 2004 UTIG scientists and JSG students collected seismic profiles on a 16-day research cruise along and perpendicular to the Blanco Fracture Zone. These cruises have provided valuable information that will make it easier to interpret the geology of oceanic crust at locations away from these rare tectonic windows, Hess Deep and the Blanco Fracture Zone.

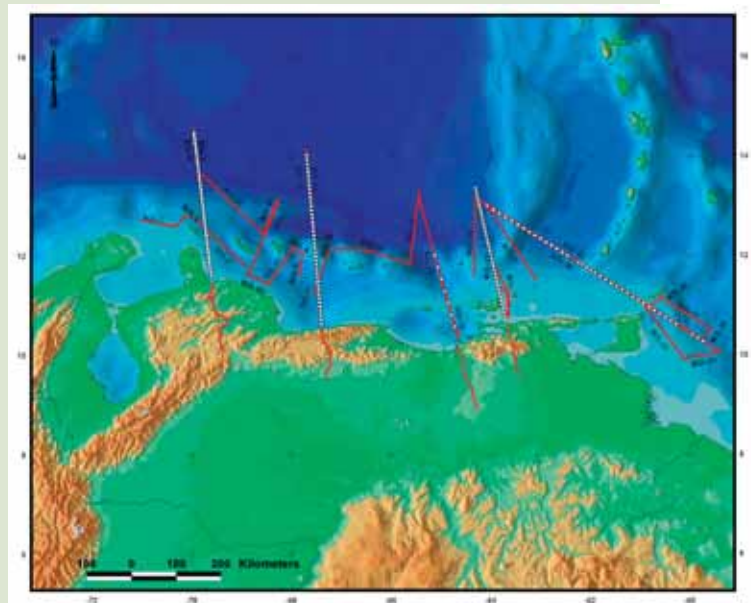


Map showing the new UTIG seismic coverage offshore Nicaragua. UTIG researchers are currently processing the 4,600 kilometers of high-resolution multichannel seismic data.

THE CONTINENTAL MARGIN offshore Nicaragua is especially interesting because here there is a very well developed forearc basin between the Middle America Trench, to the west, and the volcanic arc, to the east. This basin, known as the Sandino Basin, shallows to the southeast where sedimentary strata and igneous basement are exposed in Costa Rica but deepens to the northwest off Nicaragua and El Salvador, where the sedimentary section may be as much as 20 kilometers thick. This long-lived basin has recorded much of the tectonic history of the area and also most likely holds key information regarding the role of eustatic sea-level change on the development of stratigraphic patterns. In November 2004, UTIG scientists with colleagues from Nicaragua and El Salvador participated in a major

offshore seismic experiment in Nicaragua to address these questions. They collected 4,600 kilometers of high-resolution seismic data onboard the R/V *Ewing* using a 2,000-meter-long streamer and GI airgun sources. Interpretation of these data will provide critical information for investigations of eustasy and regional tectonics and will also be used to locate scientific drilling sites in an upcoming proposal to the Integrated Ocean Drilling Program (IODP).

Farther south, Venezuela and Trinidad and Tobago possess some of the largest **HYDROCARBON** reserves in the western hemisphere with 38 known giant fields whose oil reserves are currently estimated at 77 billion barrels. All but one of these giant fields lie onshore because the offshore areas remain underexplored for hydrocarbons. Over the past several years UTIG and BEG scientists have developed an industry-based consortium to compile and interpret existing seismic and well-log data from offshore eastern Trinidad. A new UTIG project with emphasis on the deep-water areas of Venezuela and Colombia will start in September 2005.



Map showing the location of multichannel seismic acquired and Ocean Bottom Seismometer (OBS) locations during the BOLIVAR experiment cruise.

The **BOLIVAR** (Broadband Onshore-offshore Lithosphere Investigation of Venezuela and the Antilles arc Region) project is a multidisciplinary investigation to examine how island arcs, marginal basins, and oceanic plateaus become attached (accrete) to continents. Specifically, the project investigates arc-continent collision and accretion,

high-pressure/low-temperature rock exhumation, and the development of folded belts and sedimentary basins along the Caribbean–South American plate boundary zone. This NSF-sponsored study involves scientists from Rice University, UTIG, the University of Arizona, the University of Houston, and Georgia Tech University. Other collaborators include scientists from FUNVISIS (the Venezuelan earthquake studies agency), as well as the Venezuelan and Trinidadian national oil companies. In April and May 2004, as part of the BOLIVAR project, a group of UTIG scientists and JSG graduate students participated in a two-ship seismic reflection program with colleagues from Rice University to collect both deep-penetration seismic reflection data and refraction data. These data are helping researchers to understand both the tectonic evolution of the region and its hydrocarbon potential.

Conflicts between Man and Nature

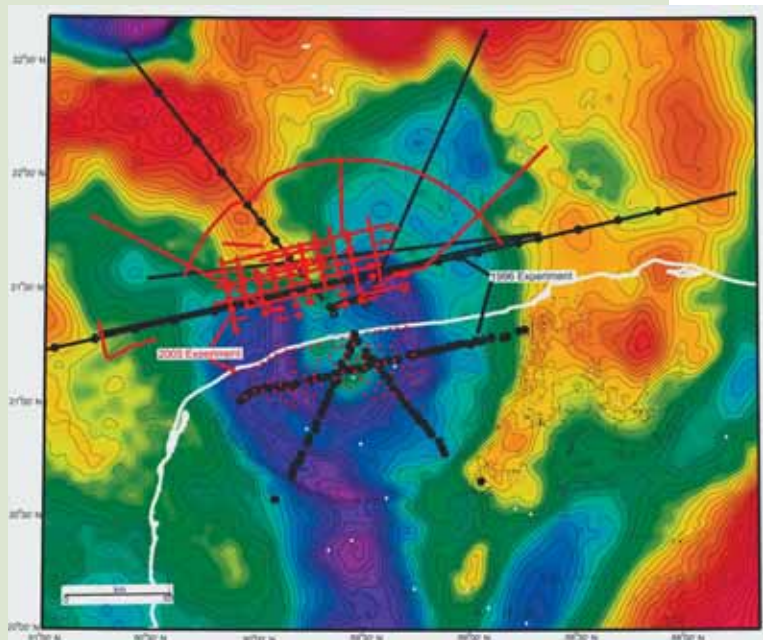
The marine geophysical techniques that UTIG scientists use to investigate complex research problems also yield information of great importance to society. UTIG scientists were invited to sail as part of an international expedition of eminent scientists to explore the site of the December 26, 2004, Asian tsunami aboard the British ship the *M/V Performer*. Using geophysical surveying and a unique deep-water remotely operated vehicle, the Sumatra Earthquake and Tsunami Offshore Survey (SEATOS) acquired dramatic evidence of seafloor ruptures resulting from the magnitude 9.3 Sumatra earthquake. The data from the expedition will take months to fully analyze, but the findings will provide a detailed understanding of the forces that caused the deadly tsunami. Models of the tectonic motions and sequence of events associated with the Asian tsunami will be used to help minimize the future devastation and loss of life resulting from tsunamis in other parts of the world. SEATOS will be the subject of a global two-hour documentary special, *Journey to the Heart of the Tsunami*, which will be broadcast on Discovery Channel in the United States, Europe, Asia, India, and Latin America in the winter.

Impacts

Sixty-five million years ago a large asteroid smashed into Earth, creating a 195-kilometer-diameter crater—the Chicxulub impact crater—now buried by about

1,000 kilometers of sedimentary rock under the Gulf of Mexico and Mexico's Yucatan Peninsula. The ejecta from this impact produced planet-wide, temporary changes in the atmosphere and oceans that ultimately caused the extinction of the majority of the world's species at the Cretaceous-Tertiary boundary (K/T). For more than a decade UTIG scientists have been investigating the Chicxulub impact crater in an effort to determine the size of the asteroid and the geologic effects and environmental consequences of such cataclysmic extraterrestrial events.

In January and February 2005, UTIG scientists, JSG students, and researchers from seven other universities performed an onshore-offshore seismic survey of the Chicxulub impact crater. The science team deployed 82 land seismometers and 25 ocean-bottom seismometers (deployed twice) which, along with a six-kilometer, 480-channel towed hydrophone streamer, recorded 36,580 airgun signals for this study. The research team is using the data to map the deformation recorded in the upper crust near the crater center, to learn more about the crater's central "peak ring" and confirm that the larger impact structure consists of multiple concentric rings, and to determine the obliquity and direction of the impact—information that will help them quantify the amount



The image above shows gravity over the Chicxulub impact structure (courtesy of Alan Hildebrand and Mark Pilkington, Geological Survey of Canada) and locations of UTIG OBS deployments and multichannel seismic lines acquired during two different experiments in the area. The data recorded by these instruments are being used to model the crustal structure beneath the crater.



Scientists from UTIG pose with the Twin Otter aircraft they used to collect aerogeophysical data over the Amundsen Sea Embayment in Antarctica. Mt. Erebus, an active volcano, is in the background.

of volatiles released into the atmosphere by the K-T event.

The results of the Chicxulub survey will significantly expand the current understanding of the K-T impact and, by extension, other large-diameter bolide impacts on Earth and neighboring rocky planets. Armed with this new information, scientists will be able to understand how the event caused mass extinctions and better assess the present-day risk posed by the thousands of Earth-crossing comets and asteroids in our solar system.

Geology and Climate: Hot (and Cold) Topics

The geologic record has long shown that Earth regularly experiences global changes in climate, but we now have hard evidence from a variety of sources that human activities affect climate as well. Although there is still uncertainty about the magnitude of human influence and about how much climate will change over the next 20–100 years, there is general agreement that global warming is occurring. UTIG researchers study climate using the latest technology to access the geologic record of climate change found on land, in lakes, and in the oceans, as well as conduct aerogeophysical surveying to document climate fluctuations preserved in the Antarctic ice sheets.

ANTARCTICA hosts two major ice sheets, which are a key component of the world's climatic system and have a major influence on global sea levels. Scientists from UTIG have collected aerogeophysical data for many years to evaluate the dynamics of the West Antarctic Ice Sheet (WAIS) and determine how ice thickness changes over time. Their work confirms that the Antarctic ice is melting; sea level is rising, and the impact on coastal areas and cities like Boston, New York, and London will be evident within our lifetime.

This year the focus was on the Amundsen Sea Embayment, the most remote major drainage basin of the WAIS, and the one having the greatest potential for collapse as a result of climate warming. The ice within the Embayment is melting, thinning, and retreating rapidly, producing massive and rapid discharges of ice into the ocean. This melting may lead to significant global sea-level rise during the next 100 years.

UTIG scientists teamed up with the British Antarctic Survey to carry out the largest Antarctic field project the continent has ever witnessed, an airborne geophysical survey of the Amundsen Sea Embayment. The researchers worked from two remote field camps—an endeavor that required 40 flights by U.S. Air Force LC-130 Hercules aircraft from McMurdo Station, the U.S. Antarctic Program's logistical center.

UTIG and the British Antarctic Survey (BAS) together flew 107 flights during the 2004–05 austral summer field season acquiring 60,000 line kilometers of data over an area the size of New Mexico. Laser altimetry data provided accurate measurements of the present surface elevation. Ice-penetrating radar provided images of ice layers and the sub-ice topography many kilometers below the ice surface to help the science team understand how historical snow accumulation rates and annual precipitation affect glacial flow and the overall balance of the WAIS. Gravity and magnetic data reveal tectonic elements, such as faulting and volcanism, which contribute heat to the system and influence flow of overlying glaciers. Results from the airborne geophysical survey of the Amundsen Sea Embayment will be used to model future ice sheet behavior and potential effects of climate change. They will allow us to understand what Antarctica has in store for us in terms of global climate and sea-level change.

Studying global climate requires information about the tropics as well as the polar regions. One

unanswered question about climate concerns how ongoing warming will affect phenomena such as **EL NIÑO**, a disruption of the ocean-atmosphere system in the Tropical Pacific having a global impact on weather. During an El Niño, the warm ocean waters of western Pacific Ocean spread toward the east, resulting in increased rainfall in the normally dry western United States and Peru. Fortunately, the growth and isotopic composition of tropical corals are strongly affected by temperature. Moreover, corals produce annual growth rings much like those in trees; thus, collecting and analyzing samples from appropriately chosen corals allow scientists to study the history of El Niño events over the past several thousand years. This year, a UTIG project focused on collecting coral samples from Vanuatu, an island nation in the Southwest Pacific between Australia and Fiji.

There is more to understanding modern climate than collecting geological and geophysical data. UTIG's numerical climate modeling group uses these observational data in complex models to determine the sensitivity and response of climate processes. Their models must properly describe the long-term interactions between the atmosphere, the oceans, polar ice, and geological processes; however, they are quantitatively delicate because although these processes are intimately connected, their characteristic time scales range from days to many thousands of years.

The interplay between plate tectonics and climate

To examine the interplay between plate tectonics and high-latitude climate variability, in spring 2005, UTIG scientists joined colleagues from Stanford University, ETH Zurich, and the University of Geneva to begin a multiyear project on Lago Fagnano. The southernmost, ice-free lake in the world, Lago Fagnano sits on the actively deforming Magallanes-Fagnano fault system, which marks the boundary between the South American and Scotia plates where it cuts through Tierra del Fuego and the southernmost Andean Cordillera. The lake potentially contains a 20,000-year accumulation of sediments that preserve the record of the geotectonic history of the South America–Scotia plate boundary and the Andean Cordillera, as well as local, regional, and global climate variability. Some evidence suggests that Lago Fagnano may have been open to the sea as a



Satellite image of Lago Fagnano and location where UTIG scientists on the Neecho collected high-resolution seismic data in March, 2005.

fjord during the early Holocene. If this proves to have been the case, then the lake would yield both lacustrine and marine sedimentary records of climate change through time.

Using a 36-foot boat specially rigged to collect high-resolution seismic data, the *Neecho*, the researchers imaged the upper 15 meters of the lake floor. They have identified sites appropriate for coring guided by the geophysical survey data. Isotopic analyses of these cores will yield information about climate before and during the period of human influence, and shed light on the history of the Southern Hemisphere westerly winds.



Boerne High School students and teachers and UTIG researchers on the Atlantic coast of Tierra del Fuego, March 2005. The smiles on everyone's face attest to the value of this tremendous educational experience.

Integration of research with education

The hallmark of the world's great universities is a commitment to basic research and the integration of research with education. UTIG initiates and manages research projects that are often international, large-scale, and multi-institutional efforts. Acquiring the data for such programs often requires extensive coordination and logistical support. These research programs occupy about 25 scientists employed at the Institute, as well as a similar number of support staff and students (graduate and undergraduate) who use the data acquired for their dissertations and theses. In 2004–05 UTIG researchers supervised 21 graduate students, 6 of whom received advanced degrees, and supported another 11 undergraduate research assistants. In addition, UTIG hosted an Incorporated Research Institutions for Seismology undergraduate research intern for the second consecutive year.

UTIG recognizes the importance of providing educational opportunities to K–12 educators, who play a critical role in shaping the minds of young people who are the future of our science. To that end, we have successfully completed the third and final year of our NSF-sponsored GK–12 project, which has provided support for nine graduate fellows from the Department of Geological Sciences to work with K–12 teachers and their students. The legacy of this project includes 10 abstracts of presentations given at national or regional geoscience meetings, 13 high

school-level curriculum units comprising more than 30 learning activities, 13 workshops for teachers, and more than 35 seminars or presentations on the project.

We also involve K–12 educators in our field research programs through UTIG's "Texas Teachers in the Field" program. This year three teachers and four high school students from the Boerne Independent School District participated in the Lago Fagnano project. The teachers and students mapped faults distributed parallel to the shores of Lago Fagnano and collected water and soil samples for chemical and isotopic analysis. Their field work is an important component in the overall field objectives of a much larger, international project.

With NSF and JSG funding UTIG will collaborate with Huston-Tillotson University, a historically black college located in Austin, in the upcoming academic year. UTIG will provide geoscience education to K–12 and undergraduate minority students, professional development to pre-service and in-service teachers for the Texas high school Earth science course Geology, Meteorology and Oceanography, and research experiences for Huston-Tillotson undergraduates at UTIG. The project will reach out to members of a growing segment of U.S. society whose talents and skills are underrepresented in the geoscience community. It complements the JSG's new diversity initiative involving two other minority-serving institutions, Fort Valley State University in Georgia and Southwest Texas Junior College.

Marine or terrestrial? Terrestrial or extraterrestrial?

Truth can be stranger than fiction; and this year, two ongoing UTIG projects defy regular classification as marine or terrestrial. The first such project is a planned seismic survey of crust beneath the western **ARCTIC OCEAN**. The Arctic is poorly understood, even though it contains the seismically active plate boundary between the Eurasian and North American plates. Whereas seismic surveys traditionally involve towing a seismic streamer and using an airgun array as a controlled source, this approach isn't possible in the Arctic because it is largely ice covered even during the summer months. Thus, the planned project will use helicopters to deploy/recover broadband/digital hydrophones deployed through holes drilled in the ice pack and tracked using a Global Positioning System (GPS) receiver and an icebreaker towing an airgun to provide the source signal. The resulting crustal sections will be used to calibrate existing ship, satellite, submarine, and aerogravity data, to construct realistic models, and to evaluate the origin and degree of tectonic motion along various subsea features in the Arctic.

When humans visited the Moon during the Apollo missions more than 30 years ago, they deployed seismometers that recorded seismic activity from 1969 to 1977. Although these data were recorded and transmitted digitally, scientists carried out the original analyses of the more than 12,000 events recorded using analog methods applied to paper seismograms. This method was partly a reflection of the scientific practice of that time, but mostly because computers of the 1970s didn't have the speed or memory to correlate and analyze the events using "modern" digital methods, many which had yet to be developed. One remarkable result of the original analysis was that most of the **MOONQUAKES** originated in nests at depths of 700–1,200 kilometers on the Moon's near side—the side closest to Earth at all times. The analysis also suggested that these nests had dimensions of only a few hundred meters, and within them events occurred repeatedly, apparently caused by lunar tidal stresses.

This year a UTIG scientist revisited the Apollo seismic data and reanalyzed it using modern computational methods. Because today's desktop workstations are

more powerful than the supercomputers of the 1970s, it is possible to cross-correlate all the records. He identified about 6,000 new events and 88 new nests—five times as many "deep moonquakes" as identified first time around. Modern location methods show that a few of the deep quakes occur on the Moon's far side. Moreover, the new analysis reveals that nests aren't as small or as strongly correlated with the tide as thought previously. Nevertheless, the vast majority of located events are on one side; it is still unresolved as to whether this is an artifact caused by the station distribution and attenuation within the Moon's deepest interior or simply that the Moon's activity is truly "one sided."

Special Mention



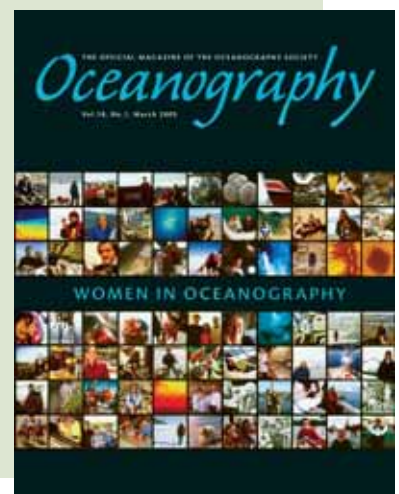
In March 2005, fresh from Antarctica, UTIG's **John W. "Jack" Holt** and a colleague from the British Antarctic Survey participated with two award-winning science reporters in a press conference on "Communicating Global Environmental Change" at the

annual meeting of the American Association for the Advancement of Science in Washington, D.C. It is often very difficult for scientists to communicate the nature of environmental change to the general public and the urgency for action to decision makers. The rapid rates of ice melting that UTIG researchers have measured in Antarctica, however, make it easier to translate the impact of global warming into images that ordinary people understand.



UTIG is especially pleased that **Gail Christeson** is featured, along with other notable women scientists, in the March 2005 issue of *Oceanography*, Special Issue:

Women in Oceanography. As the number of women pursuing geoscience degrees continues to increase at The University of Texas and other academic institutions throughout the nation, Gail serves as an important role model for them.



UTIG researchers remain active in the geoscience community and demonstrate leadership at the local, national, and global levels.



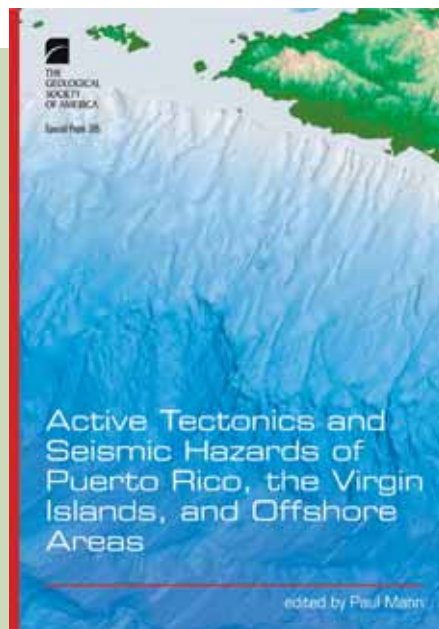
UTIG Director **Paul Stoffa** was recently selected as Chair of the Board of Directors of IODP Management International, Inc., which administers the new Integrated Ocean Drilling Program.



Kathy Ellins is a member of the Incorporated Research Institutions for Seismology (IRIS) Education Committee and served on the IODP Management International Education and Outreach Task Force.



Jamie Austin is the current Chair of American Geophysical Union's (AGU) Development Board, after serving as a member for two years.



New book edited by Paul Mann, published as GSA Special Paper 385, 287 p., 2005. Available at <http://rock.geosociety.org>



Paul Mann (UTIG) and Asahiko Taira (University of Tokyo) edited a special issue of *Tectonophysics* on the tectonics of the Solomon Islands and Ontong Java Plateau convergent zone (October 2004, v. 389). The volume contains a total of six papers, including three papers first-authored by UT M.S. students Eric Phinney and Shane Cowley and by Chiba University M.S. student Seiichi Miura. Eric and Shane are now working as explorationists with BP in Cairo, Egypt.

New People



Matthew Hornbach (Ph.D., University of Wyoming, 2004) is a postdoctoral fellow working with Nathan Bangs and Harm Van Avendonk analyzing seismic data on the

Niger delta and studying the fluid pressures in the shale formations of this submarine delta. He is also using UTIG's seismic processing facilities to enhance 2D/3D seismic images of the Blake Ridge gas hydrate province. The studies should yield valuable insight into the dynamics of submarine fluid migration. He is supported with matching contributions from JSG and GX Technology.



Duncan Young (Ph.D., Southern Methodist University, 2003) is a postdoctoral fellow working with Don Blankenship. His research interests

are ice-rock physical interactions in an ice-cap context and tectonic evolution of the younger planetary crusts, especially Venus. He is supported with funding from the Vetlesen Foundation.

*JSG researchers
and members of
the Quantitative
Clastics Laboratory
Industrial Associates
conducted field
studies of shelf-edge
deltaic deposits in
onshore Trinidad,
West Indies.
Photo by
Lesli Wood,
March 2005.*



GEOLOGY FOUNDATION

William L. Fisher, Director

GEOLOGY FOUNDATION NEWS

The Geology Foundation and its Advisory Council were formed by The University of Texas Board of Regents 52 years ago. Through the dedicated efforts of the Advisory Council and many friends and alumni over the years, the Foundation has become a defining element of the Jackson School of Geosciences and is today the largest foundation at The University of Texas at Austin. At the end of June 2005 total endowed and mineral assets of the Foundation exceeded \$340 million.

The driving force of the Foundation is its Advisory Council, which historically has included many of the corporate leaders in the energy, mineral, and environmental industries, as well as leaders from academia and government—a trend that continues today. The current Chairman of the Advisory Council is Mr. Fred L. Oliver, President of PVT, Inc., of Dallas; the current Vice Chairman is Mr. James W. Farnsworth, Vice President, Worldwide Exploration, BP, of London. The Foundation is governed by the Executive Committee, chaired by Foundation Director Bill Fisher and consisting of the unit heads of the Department of Geological Sciences, the Bureau of Economic Geology, and the Institute for Geophysics.

Joining the Foundation Advisory Council as new members are Mr. Michael S. Bahorich, Executive VP, Exploration and Production Technology, Apache Corporation, Mr. Robert R. Beecherl, President, Vecta Exploration, Ltd., Mr. Ed Duncan, Beta4 Exploration and Production, Inc., Mr. David L. Kirchner, Basin & Range Hydrogeologists, Inc., and Dr. Donald L. Paul, Vice President and Chief Technology Officer, Chevron Corporation. Dr. Charles G. Groat retired from the Advisory Council as he stepped down from the directorship of the U.S. Geological Survey

to assume appointment in the Jackson School. We are saddened at the loss of two other members, Mr. George A. Donnelly, Jr., and Mr. William “Bill” Francis Reynolds, who died during the year.

Five new endowments were established in the Foundation during the past year. *The Robert K. Goldhammer Chair in Carbonate Geology* was established by the Goldhammer family through the Goldhammer Foundation to honor the memory of their son and husband, Bob Goldhammer, a Jackson School faculty member tragically killed in a vehicle accident while traveling to Geology 660 field camp in May 2003. The Fort Worth Wildcatters Association established the *Fort Worth Wildcatters Association Undergraduate Scholarship*. Advisory Council member Jim Gibbs established the *James A. Gibbs Hydrogeology and Engineering Geology Research Fund*. Madison T. Woodward established the *James R. Moffett Scholarship Fund*. Two new chair endowments were created from earnings from the John A. and Katherine G. Jackson Endowed Fund in Geosciences—the *John A. and Katherine G. Jackson Chair in Computational Geosciences* and the *John A. and Katherine G. Jackson Chair in Energy and Mineral Resources*.

During the past year the Foundation received additional transfers from the Jackson estate, including cash and working interests in operating oil and gas wells. The Foundation, by delegation of The University of Texas Board of Regents, also manages overriding royalties from oil and gas properties received from the Jackson estate. Annual income from royalties and working interests is on the order of \$2.5 million, 75 percent of which is expendable and 25 percent of which goes directly to the Jackson Endowment.



Michael S. Bahorich



Robert R. Beecherl



Ed Duncan



David L. Kirchner



Donald L. Paul



Geology Foundation Advisory Council showing Jackson School spirit at fall meeting, October 2004. Photo by J. Jaworski.

Contributions of expendable funds to the Geology Foundation from corporations, ex-students, and friends amounted to \$816,328 for the period from June 1, 2004, through May 31, 2005. The Foundation also received income in the form of scholarships

from the Dorothy B. Banks Charitable Trust in the amount of \$85,092 for the 2004–05 academic year. The Foundation greatly appreciates all these contributions.

The Jackson School of Geosciences held its first Endowed Presidential Scholarship dinner on May 3, 2005, at the Alumni Center for donors and recipients of the scholarships. We were privileged to have Mr. and Mrs. Willard R. Green, sponsors of the Guy E. Green Endowed Presidential Scholarship, and Mr. and Mrs. John B. Payne, sponsors of the Wayne Franklin Bowman Endowed Presidential Scholarship, attend. Fourteen scholarship recipients, their guests, and Jackson School staff were also in attendance.

Dr. William L. Fisher, Director of the Jackson School, welcomed the group and spoke about the new Jackson School—where it is going and why these scholarships are important. Dr. Clark Wilson, Chairman of the Department of Geological Sciences, introduced and gave a short profile of each recipient.



Donors of endowed presidential scholarships were honored at a dinner hosted by the Jackson School of Geosciences for students receiving this generous support. From left, Mr. and Mrs. Willard R. Green (Guy E. Green Endowed Presidential Scholarship), Dr. William L. Fisher, Director of the Jackson School, and Mr. John B. Payne (Wayne Franklin Bowman Endowed Presidential Scholarship).

GEOLOGY FOUNDATION ADVISORY COUNCIL

EFFECTIVE SEPTEMBER 1, 2005

Chairman

Mr. Fred L. Oliver
PVT, Inc.

Vice Chairman

Mr. James W. Farnsworth
BP

Honorary Life Members

Dr. Thomas D. Barrow

Dr. Richard R. Bloomer

Dr. Robert E. Boyer

Mr. L. Decker Dawson
Dawson Geophysical Co.

Dr. Peter T. Flawn

Mr. William E. Gipson
Gas Fund, Inc.

Mr. James R. Moffett
*Freeport-McMoRan Copper
& Gold, Inc.*

Members

Dr. Ronald A. Bain
Endeavour International

Mr. Michael S. Bahorich
Apache Corporation

Mr. Kenneth T. Barrow

Ms. Annell R. Bay
Shell Energy Resources Company

Mr. Robert R. Beecherl

Mr. Thomas M. Burke
Consultant

Mr. A. T. "Toby" Carleton
Tocor Exploration

Mr. Paul D. Ching
*Shell International Exploration and
Production*

Mr. Richard J. Chuchla
ExxonMobil Exploration Company

Mr. Weyman W. Crawford

Dr. Rodger E. Denison

Mr. Ed Duncan
Beta4 Exploration and Production

Mr. Thomas E. Fanning

Mr. Denis François
TOTAL E&P USA, INC.

Mr. James A. Gibbs
Five States Energy Company, L.L.C.

Mr. John W. Gibson, Jr.

Mr. Gerald M. Gilbert

Ms. Robbie R. Gries
Priority Oil & Gas LLC

Dr. Paul R. Gucwa

Mr. Bill D. Holland
Holland Exploration, Inc.

Mr. David S. "Scotty" Holland

Mr. David L. Kirchner
Basin & Range Hydrogeologists, Inc.

Mr. James T. Langham, Jr.
Langham McKay & Company

Dr. Susan A. Longacre
*Chevron Corporation Fellow,
Emeritus*

Mr. William D. "Dusty" Marshall
Amerada Hess Corporation

Mr. Jack H. Mayfield, Jr.
Mayfield I, Ltd.

Mr. F. "Woody" Pace, Jr.
Marathon Oil Company

Dr. Donald L. Paul
Chevron Corporation

Mr. James C. Patterson

Mr. Stephen L. Shaw
Burlington Resources

Mr. Don B. Sheffield

Mr. Russell G. Slayback
Leggette, Brashears & Graham, Inc.

Mr. Daniel L. Smith
Sandalwood Oil & Gas, Inc.

Mr. William T. Stokes, Jr.
Consultant

Mr. Bryan C. Wagner
Wagner Oil Company

Mr. Joseph C. Walter III
Walter Oil and Gas Corporation

Mr. Charles G. Weiner
Texas Crude, Inc.

Mr. Addison A. Wilkinson

Dr. Charles R. Williamson
Unocal Corporation

Mr. Phillip E. Wyche

Members, Ex-Officio

Dr. Larry Faulkner
*President
The University of Texas at Austin*

Dr. Sheldon Eklund-Olson
*Executive Vice President
and Provost
The University of Texas at Austin*

Dr. Richard B. Eason
*Vice President for Resource
Development
The University of Texas at Austin*

Dr. William L. Fisher
*Director, Geology Foundation
The University of Texas at Austin*

Gifts to the Geology Foundation

June 1, 2004, through August 5, 2005

A

Allday, Mrs. Doris Fondren
Amaral, Mr. Eugene J.
Ames, Mr. Eugene L., Jr.
Anderson, Mr. James H.
Anderson, Mrs. Nancy J.
Anderson, Mr. Payton V.
Atkins, Mr. John E.
Avakian, Mr. Arten J.
Ayers, Mr. Walter B., Jr.

B

Baker, Mrs. Carol S.
Barrow, Ms. Donna S.
Barrow, Dr. and Mrs. Thomas D.
Barton, Mr. Gerald S.
Beaver, Mr. Ralph J., Jr.
Bell, Mr. Christopher J.
Bloomer, Mr. Richard R.
Bosch, Mr. Silverio C.
Bostwick, Mr. Douglas L.
Bowen, Mr. D. Andrew
Boyce, Mr. William M.
Braithwaite, Mr. Philip
Brewer, Mr. Herbert L.
Brigham, Mr. Ben M., III
Brister, Ms. Christina
Bristol, Mr. David A., Jr.
Brunson, Mr. Wallace E.
Bryant, Mr. Leonard C.
Burke, Mr. Thomas M.
Bybee, Mr. Robert W.
Bybee, Mrs. Sarah L.
Byrne, Dr. James R.

C

Cage, Mr. and Mrs. Warren J., Jr.
Cahoon, Mr. Frank K., Jr.
Callender, Mr. Dean L.
Camp, Mr. Rodney J.
Carleton, Mr. and Mrs. Alfred T.
Casey, Ms. Josephine
Caskey, Ms. Deborah J.
Cassell, Mr. Dwight E.
Caughey, Mr. Charles A.
Cernosek, Mr. H. D.
Chicken, Mr. Daryl S.
Chuchla, Mr. Richard J.
Clabaugh, Mr. Stephen E.
Clanton, Mr. Uel S., Jr.
Compton, Mr. Steve K.

D

Darwin, Mrs. Pamela T.
Davenport, Mr. Howard E.
Dean, Mr. Henry C.
Dedeke, Mr. Leslie A., Jr.
DeLancey, Mr. Charles J.
Denison, Mr. Rodger E.
Denson, Reverend J. Lane, III
Doenges, Ms. Susann V.
Donnelly, Mr. George A., Jr.
Doty, Mr. Gene C.
Doyle, Mr. James D.
Duchin, Mr. Ralph C.
Dunlap, Mr. Dallas B.
Dyer, Mr. and Mrs. Byron F.

E

Espinosa, Mr. Roger P.
Everett, Mr. H. Rizer

F

Fanning, Mr. Thomas E.
Fisher, Dr. and Mrs. William L.
Flack, Mr. Goldoni E.
Fox, Mr. Hewitt B.
Frasher, Mr. J. H.
Friddle, Mrs. Annabelle R.
Furrh, Mr. James B., Jr.

G

Garner, Ms. Susan A.
Garza-Hernandez, Mr. Abelardo
Gates, Ms. Cornelia H.
Gayle, Mr. and Mrs. Henry B.
Geddie, Mr. Thurman B.
Gell, Ms. Christianne M.
Germiat, Mr. Steven J.
Gestel, Mr. Jean-Paul V.
Gibbs, Mr. James A.
Gibson, Mr. Fred M.
Gilbert, Mr. Edwin F.
Gillis, Ms. Gretchen M.
Gips, Mrs. Brian H.
Gipson, Mr. William E.
Goble, Mrs. Georgette Covo
Goetz-Markley, Ms. Lisa K.
Gordon, Mr. James E., Jr.
Grasso, Mr. Volker C.
Greenberg, Mr. Redge L.
Gries, Ms. Robbie R.
Groat, Dr. Charles G.
Guess, Mr. Roy H., Jr.

H

Haenggli, Dr. Walter T.
Haertlein, Mr. Albert
Hale, Mr. Bryan M.
Hamman, Mr. Henry R.
Hammond, Mr. Weldon W., Jr.
Haring, Mr. Louis H., Jr.
Harmon, Mr. Russell S.
Haun, Mr. Keith I.
Hill, Mrs. Janice L.
Hixon, Mr. S. B.
Hood, Mr. James W.
Hood, Mrs. Jennifer L.
Hooper, Mr. Ben P.
Hoover, Ms. Eleanor M.
Houser, Mr. Richard T.
Hudson, Mr. William P.
Hummel, Mr. Gary A.
Huston, Mr. Daniel C.

J

Jackson, Mr. James R.
Jackson, Mr. Russell W.
Janssen, Mr. James C.
John, Mr. Charles B.
Johnson, Mr. Charles G.
Johnson, Mrs. Emily W.
Jones, Mrs. Gene F. Keyser

K

Keeney, Mrs. Elizabeth Walter
Kent, Mr. Robert T.
Kolvoord, Mr. Roger W.

L

Laguros, Mr. George A.
Leist, Ms. Ann H.
Locklin, Mr. and Mrs. Allen C.
Longman, Mr. Mark W.
Looney, Mr. R. Michael
Lovell, Mr. Stephen E.
Ludwick, Dr. and Mrs. Lester E.
Lundelius, Mr. Ernest L., Jr.

M

Maler, Mr. Michael O.
Mankin, Mr. Charles J.
Marrett, Mr. Randall A.
Marshall, Mr. Sabin W.
Martinez, Mr. Louis M.
Mayfield, Mr. Jack H., Jr.
McBroom, Mr. Robert L., Sr.

McClain, Mr. Orville G.
McKinley, Mr. William R.
Meckel, Dr. Timothy A.
Merrill, Mr. Charles M.
Miller, Mr. Wayne D.
Mills, Mr. Herbert G.
Molineux, Drs. Ann M. and Ian J.
Monroe, Mr. William A.
Moon, Mrs. Jule J.
Moore, Mr. Michael E.
Morecock, Mr. Duane E.
Muehlberger, Dr. and Mrs. William R.

N

Nagihara, Mr. Seiichi
Neavel, Mr. Kenneth E.
Nelson, Mr. Gustave A.
Nemeth, Mr. Kenneth E.
Noe, Mr. David C.
Norman, Mr. Isaac W.

O

O'Brien, Mr. Bob R.
Olander, Mr. and Mrs. A. M.

P

Pace, Mr. F. Woody
Palmer, Mr. Jeffrey J.
Parrish, Mr. W. Calvin
Patterson, Mr. and Mrs. James C.
Pew, Mr. Elliott
Pickens, Mr. William R.
Plant, Anne C. W.

R

Ratcliff, Mr. Doug
Reaser, Mr. Donald F.
Reiss, Mr. Bernard W.
Reynolds, Mr. W. F.
Roach, Mr. Jess P.
Rosenberger, Dr. Randall S.
Ross, Ms. Lucy O.
Rowley, Dr. Peter D.
Russell, Mr. Jimmie N.

S

Sabins, Mr. Floyd F.
Sagasta, Mr. Paul
Sanders, Mrs. Jack S.
Schiemenz, Mrs. Elsie C.
Schulenberg, Mr. John T., Jr.
Sellars, Mr. Robert T., Jr.
Sharp, Mr. John M., Jr.
Shaw, Mr. Stephen L.
Shomette, Mr. David B.
Sicking, Mr. Charles J.
Slayback, Mr. Russell G.

Smart, Mr. John A., Jr.
Smith, Mr. Daniel L.
Sprinkle, Dr. and Mrs. James T.
St. John, Mr. Bill E.
Stanzel, Mr. Theodore E.
Stern, Mr. Thomas W.
Stevens, Mr. James B.
Stowbridge, Mr. Michael J.
Sumner, Mrs. Dorothy C.
Swadley, Mr. W. C.
Sylvia, Mr. Dennis A.
Symons, Ms. Christina M.

T

Thames, Mr. C. B., Jr.
Thomas, Ms. Icy Anna
Travis, Mr. Everette J.
Tripathy, Ms. Alka K.
Trombatore, Mr. Dennis R.
Turner, Mr. Neil L.

U

Udden, Mr. R. Andrew
Underwood, Mr. James R., Jr.

V

Ver Hoeve, Mr. Mark W.
Vertrees, Mr. Charles D., Jr.
Vest, Mr. Harry A.

W

Wahl, Mr. David E., Jr.
Walker, Mr. Mark C.
Walston, Mr. and Mrs. Virgil A., Jr.
Ward, Mr. B. H., Jr.
Warner, Dr. Ralph H.
Weimer, Mr. Paul
Weise, Ms. Bonnie R.
Welder, Mr. Frank A.
White, Mr. Jamie V.
White, Mrs. Joan P.
White, Mr. Leslie P.
White, Mr. Steven L.
Whiteman, Mr. Charles D., Jr.
Wiley, Mr. Michael A.
Wilson, Mr. John A.
Woodruff, Dr. Charles M., Jr.
Woods, Mr. Arnold M.
Woods, Mrs. Mary C.
Woodward, Mr. Madison T., III
Worrel, Mr. Charles J., Jr.
Wright, Mr. John B.

Y

Yilmaz, Ms. Pinar O.
Young, Mrs. Susan W.
Young, Mr. William C., III

Z

Zachos, Mr. Louis G.
Zimmer, Mr. Francis S.

Business, Society, and Estate Contributions

Accenture Foundation Inc.
AFMS Scholarship Foundation
Alaska Airlines
American Chemical Society Petroleum Research Fund
Apache Corporation
Austin Gem and Mineral Society
BHP Petroleum/Engineering
BP Amoco Oil
BP Foundation
W. L. & Florence Calvert Memorial Scholarship Fund
Campbell Petrographic Services Inc.
Central Texas Paleontological Society
Chevron Corporation
Chevron Corporation E&P Technology Co.
Coltex Petroleum Inc.
Communities Foundation of Texas
ConocoPhillips
Devon Energy Corporation
EOG Resources Inc.
ExxonMobil Corporation
ExxonMobil Foundation
Fredericksburg Rockhounds
Goldhammer Family Foundation
Grubbs Technical Services
Holland Exploration Inc.
Houston Geological Society
Imagine Resources LLC
J. D. & V. L. Langston Foundation
Robert S. Kier Consulting
Marathon Oil Company Foundation
Merrill Lynch & Co. Foundation Inc.
Mineral Acquisition Partners Inc.
National Geographic Society
Northwind Exploration
Occidental Oil and Gas Corporation
J. C. and W. F. Reynolds Company
J. C. & W. F. Reynolds Oil Producers
R&T Robertson Foundation
Sams Exploration Inc.
San Antonio Area Foundation
SBC Foundation
Shell E&P Technology Company
Shell International E&P Inc.
Shell Oil Company
Shell Oil Company Foundation
Solutient Geosciences Inc.
Statoil ASA
Unocal Corporation
Wilkinson Family Foundation
Williams Companies
Zinn Petroleum Company

GEOLOGY FOUNDATION ENDOWED ACCOUNTS Values as of June 30, 2005

	Book Value (\$)	Market Value(\$)
Edwin Allday Centennial Chair in Subsurface Geology	913,801	1,954,051
Edwin Allday Lectureship in Geological Sciences	221,652	396,441
Mary and Ben Anderson Endowment for Graduate Studies in Geology	46,368	84,403
Millard B. Arick Memorial Fund in Petroleum Geology	14,326	18,703
Milo M. Backus Endowed Fund in Exploration Geophysics	292,439	311,351
Virgil E. and Mildred L. Barnes Distinguished Lecture Series in Geology	48,411	59,649
Col. E. M. Barron Trust Account	143,849	338,579
Barrow Periodical Fund	255,592	380,953
Laura Thomson Barrow Graduate Fellowship	305,220	584,557
Leonidas T. Barrow Centennial Chair in Mineral Resources	1,189,960	2,932,193
Bloomer Fund for Motivated and Late Bloomer Students	217,083	368,859
Leslie Bowling Professorship	288,625	493,142
Wayne Franklin Bowman Endowed Presidential Scholarship	131,232	324,978
Don R. Boyd Endowed Fund	48,190	56,327
Don R. and Patricia Kidd Boyd Lectureship in Petroleum Exploration	66,960	144,550
Brahman Energy Company Scholarship Fund	22,868	57,481
Charl A. M. Broquet Memorial Endowed Scholarship Fund	14,973	17,820
Jesse L. Brundrett Memorial Endowed Presidential Scholarship	55,506	107,886
Fred M. Bullard Professorship in Geological Sciences	389,106	554,254
Fred M. Bullard Student Research Fund	47,779	53,039
Thomas and Ray Burke Student Job Program	266,624	331,210
Hal H. Bybee Memorial Fund	156,042	254,544
Hal P. Bybee Memorial Fund	698,689	1,623,395
L. W. Callender Memorial Fund	67,564	172,453
Dave P. Carlton Centennial Professorship in Geology	763,759	1,824,401
Dave P. Carlton Centennial Professorship in Geophysics	595,543	1,511,697
Dorothy Ogden Carsey Memorial Scholarship Fund	256,384	452,573
J. Ben Carsey, Sr., Special Maintenance Fund	229,868	373,070
Chevron Centennial Professorship in Geology	299,180	705,844
S. E. Clabaugh Fund in Hard-Rock Geology	63,002	120,864
W. Kenley Clark Memorial Endowed Presidential Scholarship	57,074	136,262
Joseph S. Cullinan Memorial Scholarship in Geological Sciences	51,072	133,164
Robert H. Cuyler Endowed Presidential Scholarship	78,983	183,536
Morgan J. Davis Centennial Chair in Petroleum Geology	1,001,225	2,319,067
L. Decker Dawson Fund in Exploration Geophysics	1,049,741	1,187,011
Ronald K. DeFord Field Scholarship Fund	249,740	570,134
Alexander Deussen Professorship in Energy Resources	292,836	569,180
Michael Bruce Duchin Centennial Memorial Endowed Presidential Scholarship	65,960	135,257
John E. "Brick" Elliott Centennial Endowed Professorship in Geological Sciences	370,175	949,645
Samuel P. Ellison, Jr., Fund	117,288	258,169
Energy and Mineral Resources Fund	36,215	91,647
William Stamps Farish Chair in Geology	501,678	1,217,124
Peter T. Flawn Centennial Chair in Geology	866,656	2,041,356
R. L. Folk/E. F. McBride Petrography Fund	47,644	54,334
Robert L. Folk Excellence Fund in Geological Sciences	91,544	117,961
Fort Worth Wildcatters Association Undergraduate Scholarship	25,290	26,924
Geology Foundation Advisory Council Centennial Teaching Fellowship	121,231	252,661
Geology Foundation Excellence Fund	123,990	219,739
Getty Oil Company Centennial Chair in Geological Sciences	1,028,821	2,537,595
James A. Gibbs Hydrogeology and Engineering Geology Research Fund	37,262	37,650
Robert K. Goldhammer Chair in Carbonate Geology	1,002,138	1,038,309
Graduate Fellowship in Exploration Geophysics	542,299	619,618
Miss Effie Graves Scholarship Fund	33,124	91,161
Guy E. Green Endowed Presidential Scholarship	39,980	98,259
J. Nalle Gregory Chair in Sedimentary Geology	792,280	1,738,286
J. Nalle Gregory Regents Professorship in Geological Sciences	345,597	687,400
Thelma Lynn Guion Geology Library Staff Award	18,289	25,976
Karl Frederick Hagemeier, Jr., Memorial Endowed Presidential Scholarship	49,594	99,526
George S. Heyer Memorial Fund	114,019	305,173
Bill D. Holland Endowed Presidential Scholarship in Geological Sciences	48,826	61,712
Houston Oil and Minerals Corporation Faculty Excellence Awards	63,966	157,356
F. Earl Ingerson Graduate Research Assistance Fund in Geochemistry	64,761	121,396
John A. and Katherine G. Jackson Centennial Teaching Fellowship in Geological Sciences	182,471	394,096
John A. and Katherine G. Jackson Chair in Computational Geosciences	2,002,275	2,001,557

	Book Value (\$)	Market Value(\$)
John A. and Katherine G. Jackson Chair in Energy and Mineral Resources	1,000,000	1,010,395
John A. and Katherine G. Jackson Endowed Fund in Geosciences	246,984,656	280,129,922
John A. and Katherine G. Jackson Exploration Geophysics Fund	26,414	30,320
John A. and Katherine G. Jackson Fellowship in Geohydrology	296,466	457,018
G. Moses and Carolyn G. Knebel Teaching Fund	110,295	267,409
Martin B. Lagoe Student Research Fund for Micropaleontology	36,649	50,761
Clara Jones Langston Centennial Lectureship in Vertebrate Paleontology	29,954	68,252
J. Donald Langston Special Operations Fund	368,838	633,897
Wann and Marietta Langston Research Fund in Vertebrate Paleontology	135,493	320,340
Jack K. Larsen–Mesa Petroleum Company Fund in Sedimentary Geology	176,177	429,620
Howard R. Lowe Vertebrate Paleontology Endowment	43,218	100,904
J. Hoover Mackin Memorial Scholarship Fund	32,601	75,793
George W. Marshall, Jr., Memorial Endowed Presidential Scholarship	43,445	78,436
Arthur E. Maxwell Graduate Fellowship in Geophysics	106,552	135,996
John C. and Marian B. Maxwell Undergraduate Scholarship in Geological Sciences	125,071	147,200
Jack H. Mayfield, Jr., Fund for Excellence in the Geological Sciences	520,536	971,103
John H. and Lujza McCammon Endowed Scholarship	14,770	37,432
Mr. and Mrs. L. F. McCollum Scholarship in Geology	30,152	69,972
Michaux Scholarship Fund	14,528	35,188
Joan A. Middleton Endowed Scholarship in Geology	11,515	16,185
Carroll C. Miller Endowed Presidential Scholarship	39,720	99,216
James R. Moffett Scholarship Fund	26,400	26,674
William R. Muehlberger Field Geology Scholarship Fund	135,116	206,754
Wes Ogden Memorial Scholarship in Geophysics	15,290	29,346
Fred L. and Frances J. Oliver Lectureship in Texas Hydrology and Water Resources	82,337	170,351
Judd H. and Cynthia Oualline Centennial Lectureship in Geological Sciences	106,966	206,923
Judd H. and Cynthia Oualline Centennial Lectureship in Petroleum Geology	99,038	192,831
Judd H. Oualline Endowment Fund	24,352	55,927
Ed Owen–George Coates Fund	135,870	336,917
James C. Patterson Fund for Excellence in the Geophysical Sciences	150,585	168,090
Bill R. Payne Centennial Teaching Fellowship	118,519	257,497
Joyce Bowman Payne Centennial Teaching Fellowship	115,017	241,425
Pennzoil and Pogo Producing Companies–William E. Gipson Scholarships	217,471	433,474
O. Scott Petty Geophysical Fund	246,661	562,653
Wallace E. Pratt Professorship in Geophysics	239,531	562,940
Louis and Elizabeth Scherck Geology Scholarship	124,653	263,205
Wilton E. Scott Centennial Professorship	317,874	796,569
Walter Benona Sharp Memorial Scholarship in Geological Sciences	50,108	131,689
Shell Companies Foundation Centennial Chair in Geophysics	1,295,478	2,872,768
Shell Companies Foundation Distinguished Chair in Geophysics	1,103,235	2,521,612
F. W. Simonds Endowed Presidential Scholarship	35,238	95,339
William T. Stokes Centennial Teaching Fellowship in Geological Sciences	185,607	425,830
Structural Geology and Tectonics Fund	137,045	270,161
Harlan Tod Sutherland Memorial Scholarship Fund	57,697	111,092
John and Elizabeth M. Teagle Scholarship in Petroleum Geology	784,381	1,563,223
David S. Thayer Memorial Scholarship Fund	35,251	88,893
Tobin International Geological Map Collection Fund	99,359	260,231
Total E&P USA Petroleum Faculty Fellowship in Geological Sciences	220,505	438,953
Udden Memorial Scholarship Fund	25,917	48,227
Glenn and Martha Vargas Endowed Presidential Scholarship	43,248	77,313
Glenn and Martha Vargas Endowment for Gems and Gem Minerals Instruction	80,041	155,550
Glenn and Martha Vargas Fund for Gem and Mineral Curation	66,019	78,454
Glenn and Martha Vargas Gemological Scholarship in Geological Sciences	20,738	43,302
Joseph C., Jr., and Elizabeth C. Walter Geology Library Fund	789,202	1,323,233
Albert W. and Alice M. Weeks Centennial Professorship in Geological Sciences	233,954	511,999
Albert W. and Alice M. Weeks Fund in Geology	638,298	1,190,011
E. A. Wendlandt Fund	10,909	25,457
Arno P. (Dutch) Wendler Professional Development Fund	137,030	327,518
Francis L. Whitney Endowed Presidential Scholarship	57,786	142,768
Francis L. Whitney Memorial Book Fund	59,263	105,108
Addison A. and Mary E. Wilkinson Endowed Presidential Scholarship in Geological Sciences	71,053	93,244
John A. Wilson Professorship in Vertebrate Paleontology	221,377	470,104
Charles E. Yager Undergraduate Field Scholarship Fund	66,483	161,515
The First Mr. and Mrs. Charles E. Yager Professorship	166,068	436,225
The Second Mr. and Mrs. Charles E. Yager Professorship	156,878	425,787
The Third Mr. and Mrs. Charles E. Yager Professorship	215,815	538,950
Keith and Ann Young Endowment for the Non-Vertebrate Paleontology Collections	46,414	55,023



Memorials

J. A. Raney

Richard "Rick" Anderson died September 3, 2004, in Olympic National Park, Washington. Rick was born July 15, 1955. He earned an M.A. in geophysics in 1983, under the supervision of Milo Backus. Rick later completed a Ph.D. in geophysics at The University of Texas at Dallas. He worked in the geophysical and other software industries in the Seattle area until the time of his death.

Kathryn Giddens Bennett passed away on August 17, 2004, in Houston, Texas. She was born in Austin, Texas, on March 27, 1939. Mrs. Bennett graduated with a B.A. degree in geology from the University of Texas, Austin, in 1961. She was a member of the Lakeside Improvement Association, Lakeside Women's Club, and Houston Geological Auxiliary, for which she served as president. She also supported and served on committees of the American Association of Petroleum Geologists and the Gulf Coast Association of Geological Societies. Her husband, James B. Bennett; her daughter, Kathryn B. Hillier, and husband, Jeffrey S. Hillier; her son, Wiley B. Bennett, and wife, Margaret R. Bennett; and grandsons, Travis W. Hillier and Cameron J. Hillier, survive her.

Seth Burnitt passed away at the age of 72 on December 16, 2004, in Austin, Texas. Mr. Burnitt was born June 9, 1932, in Calvert, Texas, where he graduated from Calvert High School in 1949. He received his B.S. in geology from the University of Texas, Austin, 1959. Seth worked more than 20 years for the Texas Department of Water Resources and later enjoyed another 15 years after his retirement managing the Calvert Farm. Mr. Burnitt is survived by his sons, Darrell of Calvert, Cal of Austin, and Stan of London, England; daughter, Jennifer Lynn Caudle, and husband, Lt. Col. Mike Caudle, of North Carolina; and grandchildren, Sherilyn and Joshua Caudle.

Everett James Carlson passed away at the age of 71 on July 31, 2004, in San Antonio, Texas. Everett was born December 19, 1922, in Taylor, Texas. The first-generation son of Swedish immigrant Oscar Carlson, Everett spent most of his childhood in Elgin, Texas, under the care of his aunt and uncle, Mr. and Mrs. Sam Maresh. As a young man Everett achieved several honors as a skilled tennis player, as well as in various academic disciplines. As valedictorian of the Elgin High School Class of 1939 he earned an academic scholarship to the University of Texas. During World War II Everett set his studies aside to enlist in the Marine Corps and honorably served his country in the Philippines. Upon his return to Austin, Mr. Carlson married Thala Ivy. He graduated from the University of Texas with a degree in petroleum geology in 1947. For three decades Mr. Carlson operated his own gas and oil exploration company based out of San Antonio. Everett James Carlson is survived by his wife, Thala Carlson; son, Larry Carlson, and wife, Jodie; daughters, Karen Hanley and Diana McNamara; grandchildren, Kim Sterling, Chad McNamara, Wade McNamara, and Jill Morin; and great-grandson, Jones T. McNamara.

Richard Bunting Coit passed away April 19, 2004, in Dallas, Texas. He was born October 12, 1908, in Renner, Texas, and was a descendant of the Routh and Coit families. He received his B.A. degree in geology from the University of Texas, Austin, in 1930. He worked for Erik Jonsson, Geological Services, Inc., and Texas Instruments. He is survived by his wife, Margaret Hatcher, his daughters, Mary Margaret Hill and Connie Coit Kitchens, three grandchildren, and five great-grandchildren.

George Arthur Davis passed away August 22, 2004, at the age of 69. George was born April 16, 1935, in Alpine, Texas. He attended the University of Texas and received his B.S. in 1959. George lived and worked in Libya and Niger for 10 years before moving to Houston in 1970 to participate in the local oil and gas industry. He owned Geophysics Consulting for several years and recently assisted Clayton Williams Energy and Spinnaker Exploration as a consulting geophysicist. George's main passion was his ranch in Waller County, where he enjoyed the peaceful qualities of the outdoors nearly every weekend. He is survived by his wife, Vicki Ream Davis; sons, Ron and Greg; daughter, Robin Davis; grandchildren, Cameron, Rachel, Tyler, and George Davis; brothers, Bill, Jim, and Charlie Davis; and sister, Alma Davis.

Kathrin Leigh Gann was born in Fort Worth, Texas, October 2, 1920. After graduating from Austin High in 1937, Kathrin attended the University of Texas and earned a B.A. in geology in 1943. Kathrin worked for Sun Oil Company in Dallas as a micropaleontologist, but returned home to help manage her family's collection of Leigh gas stations. She married J. E. Gann and became a housewife and mother of two daughters. Later, Kathrin worked as the shipping manager for Reichhold Chemicals. After her retirement Kathrin became a member of Lifetime Learning Poetry Class and developed her talent for poetry. She also served as Treasurer of the Austin Poetry Society for 15 years. Kathrin is survived by her daughters, Kathy Gann Blackburn and Alice Gann Kasper; grandsons, Travis and Nathan Kasper; and great-grandson, Cole Kasper.

Douglas Gregory Garrott, born November 14, 1927, in Bradenton, Florida, passed away July 15, 2004. After graduating from Hopkinsville High School in Hopkinsville, Kentucky, Doug enlisted in the U.S. Navy and served in World War II. In 1951 he graduated with honors from the University of Texas with a B.S. in geology. Mr. Garrott was an employee of Exxon for 35 years and retired as the Headquarter Exploration Operations Manager in 1986. Doug is survived by his wife of 55 years, Jo Ann; son, Greg Garrott; daughter, Susan Garrott Raschke; sister, Anne Evans; and grandchildren, Kimberly and Douglas.

Larry Reid Hensarling passed away September 18, 2004, at the age of 71 in Lafayette, Louisiana. He graduated with a B.S. degree from the University of Texas, Austin, in 1956. For more than 30 years, he was an independent geologist in the Lafayette area. Mr. Hensarling contributed maps and documents to the University of Louisiana at Lafayette that geology students will be able to use for many years to come. He also created an endowment at the same university in the geology department. He is survived by his wife, Joan Menefee Hensarling, daughter, Betty Ann Hensarling, three sons, Larry Reid Hensarling, Jr., and wife, Deanie, Tod Hensarling and wife, Leigh Ann, Richard Neal Hensarling and wife, Rachel, and nine grandchildren.

Paul H. Horn passed away October 17, 2004. He was born January 25, 1920, in McAlester, Oklahoma. He served in the Army during World War II in the Pacific Theatre, for which service he was awarded a Silver and Bronze Star, as well as a Purple Heart. He graduated with a B.S. degree in geology from the University of Texas, Austin, in 1947. Before settling in Dallas, Mr. Horn had a career for 45 years as a petroleum geologist in Texas and Oklahoma. He is survived by his wife, Dorothy Janet, along with his children, Rebecca, Jan, Stephen and his wife, Sally, Sharon Wagoner and her husband, Ron, Charles and his wife, Nanci, six grandchildren, and three great-grandchildren. He was known for his easy-going nature and humor.

Robert "Bob" Elliot Johnson passed away April 17, 2005, at the age of 79 in Irving, Texas. Robert, known as "Bob" to family and friends, was born November 1, 1926, in Dallas, Texas. He attended Woodrow High School and received a B.A. in geology from the University of Texas, Austin, in 1949. Bob was a veteran of World War II, serving as an ambulance driver in India for the American Field Service. He was an active member of his community as the former president of the North Dallas-Park Cities Kiwanis Club and member of the Lake Highlands Presbyterian Church. Bob is survived by his wife, Elizabeth Linton Cosgrove Johnson; brothers, Curtis Oliver and Ben Roberson; sons, Robert Elliot, Jr., and Frank Doyle and wife, Marilyn; and grandchildren, Taylor, William, and Robert Elliot III.

Earl Bernard Knott of Seguin, Texas, passed away August 28, 2004, at the age of 83. Mr. Knott graduated from the University of Texas, earning a B.S. in geology in 1949. As an active member of the Seguin community, Earl was a member of the Seguin Rotary Club and American Legion Post #245. He is survived by his wife of 60 years, Ruth Knott; daughters, Kathy Enke and Nancy Christy; and grandchildren, Allison and Mark Enke and Earl Christy. Mr. Knott was laid to rest under military honors from the United States Air Force and the American Legion.

Michael Andrew Jordan passed away March 16, 2005. He was born October 3, 1944, in Kansas City, Kansas. In 1962 he graduated from Cascia Hall Preparatory School in Tulsa, Oklahoma. He then attended the University of Kansas and graduated with a B.S. degree in 1966. After receiving his B.S., he attended The University of Texas at Austin and earned an M.A. degree in 1970 and completed a Ph.D. in 1978 in geology. Mr. Jordan taught geology and earth science courses at Indiana University, Purdue University at Indianapolis, Western Michigan University, St. Edward's College, Lamar University, The University of Texas at San Antonio, and The University of Texas at Austin. For the past 25 years he taught geology at Texas A&M University at Kingsville, which was formerly known as Texas A&I University. He was known for his dedication to teaching and his persistent attention to his students' needs; as a result, he received the New Teacher award at the beginning of his tenure in Kingsville. His wife, Janis Lynn Jan, daughter, Laura Jordan Navarro and husband, son, Stephen Michael, sisters, Susan Rogers and Linda Jordan, as well as two nieces, a nephew, and a great-nephew, survive him.

Douglas Robinson Keenan, Jr., passed away November 4, 2004. He graduated from the University of Texas, Austin, in 1945 with a B.A. degree in petroleum geology. He held membership in the Texas Exes, Chi Phi Fraternity, Houston Geological Society, and the American Association of Petroleum Geologists. He is survived by his wife, Grace, daughter, Karan Atkinson and her husband, Douglas, son, Douglas III, sisters, Mrs. Helen Ray and Mrs. Anne Curtis and husband, Charles, and other family members.

William Bird Rodan passed away June 22, 2004, at the age of 84 in Metairie, Louisiana. He was born in Wilmington, Delaware, on November 22, 1919. Mr. Rodan attended the University of Texas, Austin, and earned his B.S. in geology in 1942. From 1942 to 1946, he served in the Navy with the Fifth Amphibious Force and received the Bronze Star. Mr. Rodan worked with Amoco Oil Company for 36 years and with Crutcher Tufts Corporation for 15 years as a geologist. He was a member of the Metairie Country Club, New Orleans City Club, New Orleans Geological Society, American Association of Petroleum Geologists, Texas Exes, and Amoco Alumni Club. He was also a parishioner of St. Philip Neri Catholic Church. His wife, Earleen Parmelee, daughter, Cathy Rodan Bowman, and son, Michael Rodan, survive him. Mr. Rodan was known for his kindness and generosity.

Robert B. Vickers, Jr., died February 9, 2004, at the age of 81 in a Fort Worth, Texas, hospital. Bob was born December 27, 1922, in New Braunfels, Texas. He graduated with honors from the University of Texas, Austin, with a B.S. degree in geology. Bob worked for T. P. Coal and Oil Company, and he later worked as an independent geologist in Abilene. He had many successful years in the industry, including serving as president of the Abilene Geological Society in 1977. He was also a member of the American Association of Petroleum Geologists, a life member of the Sigma Phi Epsilon fraternity, a member of the United States Navy and the Naval Reserves, and a life member of the Texas Exes. Bob was married for 58 years to Martha Dietz Vickers and was loved by all of his family and friends. He was a caring and generous man whose rare sense of humor often surfaced and served to lighten and clarify many situations. He was an avid Texas Longhorn supporter, and was always there for those who needed him. He is survived by his daughter Joanne Pittman and her spouse, Charlie; his daughter Ralla Vickers; grandchildren, Russell Griffin and spouse, Kacie, and Bryan Griffin; great-grandchildren, Brice and Chase Griffin; nephews, Brett Petrosky and spouse, Ann, and Mark Petrosky; and grand nephews, Christopher and Kevin Petrosky.

Albert Hodges Wadsworth, Jr., passed away January 29, 2005, at his home. He was born October 11, 1916, in Bay City, Texas. He attended Bay City High School and was a graduate of Kemper Military School in Boonville, Missouri. He graduated with an M.A. in geology from the University of Texas, Austin, in 1941. He worked for Texaco in Midland, the U.S. Geological Survey, and Commonwealth Oil Company in Houston, and was an independent oil producer and mining consultant for most of his career. Mr. Wadsworth founded the Society of Independent Professional Earth Scientists (SIPES). He was a member of the American Association of Petroleum Geologists and the Houston Geological Society and was past president of the Association of Petroleum Geochemical Explorationists (APGE). Mr. Wadsworth supported legislation for independent oil production, and as a result, he would travel to Austin and Washington. His efforts helped save the depletion allowance for independents during the Ford Administration. His wife, Glenrose, daughter, Jane Frances Wadsworth Mason, daughter, Julia Rosine Wadsworth Stout and husband, Stephen, daughter, Ellen Amelia Wadsworth, Randa McDonough, daughter, and husband Jerry, Marc Howton, and his grandchildren, along with other relatives, survive him.

Robert L. Wood, Jr., passed away January 27, 2005, in Houston, Texas. He was born November 18, 1933, in Dallas, Texas, and at an early age moved to Midland, Texas, where he graduated from Midland High School in 1951. For one year, he attended Austin College in Sherman, Texas, and then transferred to the University of Texas in Austin, where he graduated with a B.A. degree in geology in January 1956. He worked for Midland Independent Oil Operator Paul L. Davis, Humble Oil & Refining Company (now ExxonMobil), and Coastal States Gas Producing Company (now El Paso Energy). Mr. Wood also worked for the Permian Corporation, which was then a wholly owned subsidiary of Occidental Petroleum Corporation. He retired from Occidental November 30, 1998. He was a member of Grace Presbyterian Church, the Board of Trustees of Austin College, the Petroleum Club of Houston, and the Texas Exes. Mr. Wood was also the past chairman and trustee of the Carl McCain

Memorial Foundation. His wife, Barbara B. Wood, brother, Lee F. Wood, and his wife, Sally Wood; 7 children, 2 step-children, 10 grandchildren, 5 step-grandchildren, 2 step-grandchildren, and 3 nephews survive Mr. Wood.

The Jackson School of Geosciences extends its respect and thanks to the following alumni for their service and dedication to the Department of Geological Sciences at The University of Texas at Austin:

George A. Donnelly, Jr.
(October 31, 1918–April 9, 2005)



George A. Donnelly, Jr., of Midland, Texas, passed away April 9, 2005. Mr. Donnelly was born October 31, 1918, in Muskogee, Oklahoma. In 1922, his family moved to Fort Worth, Texas. He graduated with a B.S. degree in geology in 1940 from the University of Texas, Austin, and previously attended New Mexico

Military Institute. Mr. Donnelly met Jean Copeland the summer before graduating from UT and married her on November 1, 1941. For five years, he served in the Army Air Corp as an officer and a Pilot Squadron Commander. He started working for the Eastland Oil Company in West Texas in 1946. Mr. Donnelly was a member of the American Association of Petroleum Geologists (AAPG), the AAPG Foundation Trust Association, Geology Foundation Advisory Council at The University of Texas at Austin, and Society of Independent Professional Earth Scientists, and was a certified professional geologist. He was also a volunteer docent for the American Air Power Heritage Museum and a member of the Exchange Club. His wife, Jean Donnelly, along with their three children, seven grandchildren, a brother, a sister, and six great-grandchildren survive him.

William "Bill" Francis Reynolds
(July 9, 1925–April 13, 2005)



William F. Reynolds of Wichita Falls, Texas, passed away at the age of 79 on April 13, 2005. Bill was born July 9, 1925, in Wichita Falls, where he attended public school before graduating from Southern Methodist University in 1949. In 1953 Bill received his M.S. in geology from the University of Texas. As a U.S. Navy

serviceman, Bill attended flight school in California and honorably served his country in World War II. In 1964, Bill and his father, John, founded the J.C. & J.W.

Reynolds Partnership, an oil business he managed until the time of his death. In 1998 Bill married Moonyeen Harrell. As a contributing member of the Wichita Falls community, Bill acted as director of the Presbyterian Manor, the Arc of Development Foundation, and the Salvation Army. He was also a member of several other organizations: the Texas Alliance of Energy Producers, the Association of Professional Geologists, the Society of Independent Professional Earth Scientists, and the American Association of Petroleum Geologists, as well as the Geology Foundation Advisory Council of The University of Texas at Austin. Mr. Reynolds is survived by his wife, Moonyeen; sisters, Barbara Crowell and Jacelyn Hall; and his brother-in-law, Walter Brady, and wife, Mary Anne.

We also mourn the loss of three staff members:

M. Josephine Casey

(July 2, 1907–November 23, 2004)



Josephine Casey, longtime secretary and editor at the Bureau of Economic Geology, died November 23, 2004, in Austin, Texas, at the age of 97. She retired from the Bureau in 1972, after serving nearly 46 years under several directors. Known as “Miss Casey” at the Bureau, she provided administrative support

to the staff and edited and oversaw the publication of many manuscripts. A native Austinite, Miss Casey lived most of her life in the Hyde Park area and was active in the neighborhood association and the University United Methodist Church.

Dixon Edge Coulbourn

(May 17, 1962–July 31, 2005)



The Bureau of Economic Geology received a blow during the summer when staff learned that a beloved friend and colleague, Dixon E. Coulbourn, had died in a swimming pool accident. Dixon, a native Austinite, began his career at the Bureau in 1987, after earning a B.A. in English in 1984 from North Texas

University. He started out working in the administrative group, where his grammar and proofreading skills came in handy. Dixon was Mr. Adaptable. He was always interested in technology and taught himself a lot about computers. He continued to hone his skills until he was reassigned to the IT group, where he became indispensable in troubleshooting UNIX computer problems and maintaining the UNIX network

system. He worked his way up to senior network analyst and maintained a network of workstations. Dixon was also renowned in Austin’s 1980s punk music scene for *Idle Time*, a fanzine he created using his own photographs and writings that celebrated the enthusiasm of punk rock. Dixon’s talents also included kayaking, painting, music, and Web sites. Dixon made many friends through his easy-going nature and will be deeply missed.

Willa Loris Beach-Porter

(June 10, 1951– January 29, 2005)



Willa Porter was an Administrative Associate in the Department of Geological Sciences and the Jackson School of Geosciences. Her main responsibilities included accounting, travel reimbursements, appointment of students, and the preparation of monthly grant financial reports for faculty and research scientists.

In her spare time, she was a Licensed Tax Practitioner before the Internal Revenue Service, an accomplished bluegrass fiddle player, and a Francophile. Born in Ohio, Willa performed music throughout the United States before settling down in Austin, Texas. She was an entertainer—telling jokes, playing bluegrass on her fiddle, singing songs she wrote—and a giving person. Known among fellow staff members for her wonderful sense of humor and beautiful spirit, Willa will be sincerely missed by many friends in the Department.

And we say goodbye to a favorite professor:

Dr. Keith Preston Young

(August 18, 1918–August 20, 2004)



Dr. Keith Preston Young was born into an old-time family in Buffalo, Wyoming, in 1918. He frequently talked fondly about his experiences growing up in the area. The first in his family to attend college, Keith began his geological education at the University of Wyoming, where he earned his bachelor’s degree in 1940 and his master’s in 1942.

In the summer of 1942 Keith served as an assistant to the Wyoming State Geologist. He joined the U.S. Army in September 1942, served in Europe, and retired as a captain in August 1946. He had interesting stories of his experiences slogging through Germany near the end of World War II. Following his military service, Keith returned to his geological studies, receiving his Ph.D. from the University of Wisconsin at Madison two years later in 1948. During the summers of 1947 and

1952, Keith also served as an instructor at the Princeton University field camp. While at Madison, Keith met Ann Smedal, and they were married on June 4, 1949. Keith and Ann had three sons, Keith M., Steven E., and Robert A.

In 1949 Keith joined the geology faculty of the University of Texas and began his long career teaching and leading research on Cretaceous stratigraphy and ammonite paleobiology. His zest for discovering ammonites and expanding knowledge of Cretaceous events continued following his retirement from teaching in 1988. From 1950 through 1983 he directed 50 theses and dissertations, most of which focused on the study of Cretaceous geology. His teaching success was recognized in 1981 when the Department awarded him the Houston Oil and Minerals Excellence in Teaching Award.

Keith's professional contributions have been significant and varied. In 1970, at the beginning of the development of the new discipline of environmental geology, Keith designed and presented a short course for the American Geological Institute. He expanded this material as the basis for a new undergraduate elective course in the Department and wrote one of the first textbooks on this discipline, *Geology: the Paradox of Earth and Man* (1975). From 1975 to 1982 he served on the Mid-Cretaceous Working Group of the International Geological Correlations program of the International Geological Congress (IGC) and on the Tethyan Correlations Working Group. His publication record began in 1949 and ranges from ammonite paleontology to Holocene subsidence. A major accomplishment has been the erection of the ammonite biostratigraphy of the Gulf Cretaceous System and the correlation of the European stages. Keith recognized the alternating endemic and cosmopolitan character of ammonite biotas in the Gulf Comanchean and the significance of this finding to understanding sea-level changes in North America. Keith continued his ammonite research long after retirement.



A labor of love, now a quiet place for his family to remember him, this rock wall was built by Keith Young in the backyard of his west Austin home.

Keith was a voracious reader of geology journals and science articles in newspapers and magazines, including those far from his own fields of interest. The various clippings that he posted on the bulletin board outside his office were the best source of new discoveries in science prior to the Internet.

A satellite interest of Keith's was research rudists, and he ably guided his students within this search domain. Keith also produced and cataloged a large number of acetate peels of rudist specimens that are now in the Texas Memorial Museum. His excellent cataloging of the research collections held within the Department of Geological Sciences has enabled the Museum to move that information speedily into the digital world.

Keith provided important public relations and service functions for the Department over the years. For example, when numerous lay visitors brought in local rocks or fossils that they wanted identified, Keith delighted in not only identifying the objects, but also providing a brief lecture on the geological and historical significance of the item.

A useful nonscientific endeavor of Keith's was writing a history of the discipline of teaching and research at UT Austin up to the time of the dedication of the "new" geology building in 1967. He remained the authority on the history of the Department long after his retirement.

Keith Young passed away at his home August 20, 2004.

The staff and members of the Jackson School of Geosciences would like to convey our respect and warmest sympathies to the families of the following alumni:

Dr. F. Lawrence Doyle (B.S., 1950)
October 16, 1928–February 26, 2005

Iacopo G. Gambini (B.S., 1958)
December 21, 1932–November 2004

Ted B. Lacaff, Jr. (B.S., 1950)
March 9, 1928–November 10, 2004

Brent L. Mejia (B.S., 1983)
March 26, 1958–September 6, 2004

H. Gene Richardson (B.S., 1981)
passed away November 4, 2004

Mary Dalton Ruckman (M.A., 1938)
October 12, 1915–January 7, 2005

Notes from the Alumni

Jim W. Adams (B.S., 1951) is a consulting geologist and writes, "I stay very active in the Boy Scouts and Confederate Air Force. I'm no longer prospecting, but staying registered in Texas and attending all AAPG national conventions in the House of Delegates, as well as the Youth Education and Activities Committee." Jim can be reached at slatsjacobs@aol.com and lives in Midland, Texas.

Elaine Marie Allan (B.S., 1983) is retired and writes, "My husband, Chris Campbell, daughter, Erika Allan (19), and son, Adam Campbell (9), are all doing great." Elaine can be reached at cecema@earthlink.net and lives in Austin, Texas.

Gene Ames, Jr. (B.S., 1955) writes, "I'm glad to still be drilling Cotton Valley Sand wells in East Texas, as well as Yegua wells in Jefferson and surrounding counties. This business is finally fun again—we thought we needed to 'stay alive until 85'—little did we know it was '05." Gene can be reached at gamesjr@sbcglobal.net and lives in San Antonio, Texas.

James H. Anderson (Ph.D., 1985) is a project manager for ExxonMobil working on upstream research. Jim can be reached at james.h.anderson@exxonmobil.com and lives in The Woodlands, Texas.

Nancy Jenswold Anderson (B.A., 1950) is retired and writes, "Traveling to Florida and California highlighted the spring for my husband and me. I'm trying to cut back on some activities while recovering from a heart attack earlier this year. I still look forward, as usual, to the blooming of Texas wildflowers, especially in the Hill Country." Nancy can be reached at nancy.j.anderson@worldnet.att.net and lives in Cedar Hill, Texas.

Payton V. Anderson (B.S., 1945) is self-employed in oil and gas operations and writes, "I'm still drilling in most of the Continental U.S. Evelyn and I have been married for 49 years and have three daughters, six grandchildren, and two great grandchildren. [Our] main hobby is travel, and we have seen most of the world." Payton lives in Midland, Texas.

Walter Ayers (Ph.D., 1984) is a visiting professor in the Department of Petroleum Engineering at TAMU teaching petroleum geology, well logging, integrated reservoir studies, and unconventional oil and gas reservoirs and writes, "My research projects include integrated reservoir studies and CO₂ sequestrating in coal with enhanced methane production." Walt can be reached at walt.ayers@pc.tamu.edu and lives in College Station, Texas.

Carol Swenumson Baker (B.S., 1984) writes, "Rodney and I celebrate our 20th anniversary this year. Our boys are in ninth and fourth grade." Carol lives in Houston, Texas.

Bennie K. Balke (M.A., 1958). Bennie lives in Niwot, Colorado.

Ralph J. Beaver, Jr. (B.S., 1958) is working at Bevex Corporation and writes, "I'm still working—maybe somewhat slower. We factor and make aluminum rivets and sell fasteners." Ralph lives in Fort Worth, Texas.

Lynn S. Beeler (B.S., 1962) writes, "Enjoying retirement." Lynn lives in The Colony, Texas.

Walter E., Jr. (B.S., 1943), and Virginia D. **Belt** are retired and write, "We sold the farm and moved to Sun City, Texas (inside Georgetown city limits)." Walter wonders, "I am only 83 now—where are my schoolmates?" Walter and Virginia can be reached at walterb@coy-internet.com and live in Georgetown, Texas.

Patricia Bobeck (M.A., 1985) is working as a geologist with the Radiation Safety Licensing Branch of the Texas Department of State Health Services in Austin and writes, "I was thrilled to receive the inaugural S. Edmund Berger Prize for Excellence in Technical and Scientific Translation from the American Foundation for Translation and Interpretation at the 2004 conference of the American Translators Association. The prize was awarded for my English translation of Henry Darcy's 1856 book titled *The Public Fountains of the City of Dijon*, which was published in 2004. Any hydrogeologists interested in traveling to Dijon to see what remains of Darcy's projects, please contact me for tour information. My son defied

Summer field camp, 1982. Taken near Royal Gorge Bridge in Colorado. The two "dudes" sporting cowboy hats are Dr. William Carlson (left) and Dr. Mark Cloos (right). Photo by D. F. Pierini, 1982.



A rare photo circa 1981 taken on the University's seismic boat Longhorn. This was the first research cruise during which graduate students were allowed on the boat while it was acquiring data in the Gulf of Mexico. Dr. Clark Wilson is sitting in the corner, and Dr. Richard Buffler is standing at the table. Photo by D. F. Pierini.



There were more than 100 students enrolled in summer field camp in 1982. Pictured are four of them relaxing at the Angel Fire golf course in New Mexico. Left to right, Ed Hooper, Kent England, Erik Davidsen, and Jimmy Kalinec. Photo by D. F. Pierini, 1982.



Summer field camp, 1982. Shot at the Purgatory Ski Lodge near Durango, Colorado. Left to right, Mike Helton, Jimmy Kalinec, Erik Davidsen, Don Pierini, and David Shomette. Photo by D. F. Pierini, 1982.

the odds and has been accepted into UT to study engineering! I'm still looking for Anna Chappell (B.S., 1981)." Patricia can be reached at pbobeck@earthlink.net and lives in Austin, Texas.

Silverio "Sil" Bosch (B.S., 1974; M.A., 1975) is an exploration geologist and writes, "[I am] enjoying South Texas oil and gas exploration and the current product price scenario. Plays keep getting deeper and riskier, but they're exciting when you get them drilled. Our summer vacation included taking Matthew (16), Eric (14), and Lisa (lower middle age) to Zion, Bryce Canyon, and Lake Powell by way of Sin City (Vegas). Little did we know at that time that we were a few miles from the huge onshore discovery in the Utah Overthrust (Covenant Oil field), which was still being kept a big secret. It's amazing what happens when you drill wells. I attended the Oklahoma State football game in Austin, where the Horns staged the second biggest comeback in NCAA history. The first half was a bummer, but what a thoroughly enjoyable night. The kids are hooked on Longhorn football. Greetings to old schoolmates and old professors. Long may you live and prosper." Sil lives in Corpus Christi, Texas.

Andrew Bowen (B.S., 1991) is a product marketing manager at Advanced Micro Devices and writes, "Although I am no longer working in a geology-related field, I keep up with the news from the UT Geology program and I still stop my car to get out and look at interesting roadcuts. Rocks will always be in my blood." Andrew can be reached at andrewbowen@alumni.utexas.net and lives in Austin, Texas.

Philip Braithwaite (M.A., 1958) is retired from Mobil Oil and writes, "We are still enjoying retirement in Dallas. Barbara has just retired from her volunteer work in teaching senior fitness classes, which will give us more opportunities for travel." Philip can be reached at pxbraith@swbell.net and lives in Dallas, Texas.

C. Douglas Brown (B.S., 1984) is president of BXP, Ltd., and writes, "Ann and I are very busy with two active boys, Renner (8) and Rowen (6). [I am] currently active operating and

developing South Texas oil and gas properties." Charles can be reached at bxpc@aol.com and lives in Dallas, Texas.

James E. "Woody" Bryant (B.S., 1943; M.A., 1948) is self-employed and writes, "[I am] searching for prospects as oil and gas prices reach record highs; however, this doesn't make them any easier to find. Time keeps marching on, and we have lost some old friends. Bon voyage!" James lives in Fredericksburg, Texas.

W. J. "Jack" (B.S., 1950) and **Susan K. Cage** (B.A., 1950) are retired and write, "[We're] enjoying springtime once again. Jack is still putting up with the trials and tribulations of Parkinson's; otherwise, we're 'hanging in.' Nevertheless, we enjoy the Newsletter and UT sports." Jack and Susan can be reached at circlesujak@aol.com and live in Georgetown, Texas.

Frank Kell Cahoon (B.S., 1957) works as an independent oil operator and writes, "My wife and I just returned from Antarctica and Torres del Paine in Chile. We had a wonderful time." Frank lives in Midland, Texas.

Dean L. (B.S., 1956) and **Marilyn J. (Dull) Callender** (B.A., 1958) are retired and write, "Retirement is great! [We] spend much of our time looking for cheap oil stocks. The energy shortage is real, and the future looks bright for your students." Dean and Marilyn can be reached at deancallender@houston.rr.com and live in Houston, Texas.

A. T. "Toby" Carleton (B.S., 1951; M.A., 1952) writes, "I continue to be active in the oil and gas business—both in exploration and production. Also, I am engaged in the salt water disposal business and the wind energy business. Ranching occupies the remainder of my time. Our family is well and growing." Toby lives in Midland, Texas.

Marvin T. Carlson (B.S., 1952) is retired and writes, "Wife and I are planning to take our five children, excluding their families, on a cruise ship through the Inside Passage of Alaska in August. My best wishes continue for all past and current professors, especially those who helped me to graduate in my favorite pursuit—geology. I still like to say: 'Hook 'em Horns.'" Marvin lives in Midland, Texas.



A group we hope to see again as future alumni: Jackson School GeoFORCE Texas Young Geoscientists, July 2005. Thirty southwest Texas honors students came together to learn more about the geology in their “backyard” at the Young Geoscientists two-day field study of Uvalde and surrounding areas. Participants are gathered in the Vulcan Materials Asphalt quarry with (far right) plant manager Chuck Beavis. The field trip was led by (far left, bottom row) Sigrid Clift of BEG and coordinated by (second from left, bottom row) Julie Spink of the Geology Foundation.

Steve M. Carlson (M.A., 1984) is a senior geophysicist with Chroma Energy and writes, “Currently I’m working on consulting projects with Pemex. I live in Sugar Land with wife and four kids: two in high school and two in elementary.”

Dwight E. Cassell (B.S., 1955; M.A., 1958) is a geological consultant and operating partner and writes, “Working and traveling—a perfect combination. Picking locations for shallow wells with working interest partners, a cruise or two, and clearing cedar. Enough to keep the body moving full time. Don’t understand retirement. Looking forward to 1950’s graduate student reunion in ‘06.” Dwight can be reached at declsc@texas.net and lives in Austin, Texas.

Chuck Caughey (B.S., 1969; M.A., 1973) works at ConocoPhillips and writes, “ConocoPhillips transferred me to Houston in February after 15 years of a very rewarding life in Indonesia. I’m now working on a global plan to recruit and develop the next generation of oil and gas finders.” Chuck can be reached at chuck.caughey@conocophillips.com and lives in Houston, Texas.

Jeffery Chen (M.A., 1994) writes, “I am still in Trinidad, stuck somewhere between the booming oil and gas industry and being

a beach bum. Though no longer pursuing geoscience as a vocation, I am still involved with some environmental assessment projects as a consulting geologist. Our fledgling boat-building company is just a year into our second commission, a 75-foot luxury power catamaran for a Caribbean owner. My family is about to get its seventh addition, our fifth child due in early June 2005. Turned the big 4-0 this year and was faced with the inevitable question—looking back on 40 years, would I have done anything differently? Definitely not!” Jeffery lives in San Fernando, Trinidad and Tobago.

Daryl Chicken (B.S., 1988) is an account manager and writes, “I have been married for 10 years to my wife, Adriana. We have been blessed with two daughters, Alexandria (5) and Hannah (1). I am keeping busy in oil field sales with Andergauge, specializing in downhole drilling tools.” Daryl can be reached at adchicken@ev1.net and lives in Magnolia, Texas.

Uel S. Clanton (B.S., 1955; M.S., 1960; Ph.D., 1968) is retired and writes, “I am staying busy doing a little consulting and a lot of wood training. In 2005, the USGS will publish a map showing the faulting in Baytown, Texas, from some of the work done in 1979.” Uel lives in Kerrville, Texas.

Joel Coffman (B.S., 1984) works as a senior environmental geologist and writes, "It has been a wonderful year—finishing up year 5 as lead environmental regulator for Napa County! Geologically, I am involved in oversight of UST cleanups and other spills and leaks, the safe installation of drinking water wells, and occasionally with septic system and wine cave installations. Of course, being the only resident geologist here, I am utilized for whatever geologic-type issues may come up as well. Life is really good for Susan and me. Our daughters are grown, and we have lots of future travel plans, including a possible relocation back to our beloved Lone Star State, with the Austin/San Antonio area in the cards within the next couple years. I hope this finds you all doing well, and Class of 82/83—say 'howdy' whenever you are in Northern California." Joel can be reached at jcoyote1@yahoo.com and lives in Vacaville, California.

Steve Compton (B.S., 1981), vice president for exploration for Tri-C Resources, writes, "We added another 'oil-finding' Longhorn to the team in Walter Denny (M.A., 1992). He joins John Clinch (B.S., 1981), John Graham (B.S., 1985), and myself in our continued search for the BIG ONE. I hope everyone has a great 2005." Steve lives in Houston, Texas.

Mary Beth Cooper (B.A., 1967; M.A., 1969) is a registered nurse at the Denver Children's Hospital and writes, "We added a third grandchild in 2004. I am still happily working as an RN at an outpatient pediatric clinic in a busy hospital. I am looking forward to retirement in six more years—just turned 60 in March. How time flies!" Mary Beth lives in Denver, Colorado.

Margaret M. Dalthorp (B.S., 1980) is president of Moorehouse Associates and can be reached at mdalthorp@sbcglobal.net. Margaret lives in Corpus Christi, Texas.

Harris P. "Koop" Darcy (B.S., 1951) writes, "Visit or write to the Institute for Creation Research, P.O. Box 2667, El Cajon, CA 72021-0667, for their catalog. They have a great report on the Geology of the Grand Canyon and Mt. St. Helens. Also visit or write to the Creation Evidence Museum, P.O. Box 309, Glen Rose, TX 76048. They have some great info on dinosaurs. If you are in the Pensacola, Florida,

area, visit Dinosaur Adventure Land and the Naval Air Museum." Koop lives in Houston, Texas.

Leslie A. Dedeke, Jr. (B.S., 1955) is retired and writes, "[I am] watching the population grow day by day in New Braunfels, Texas." Leslie lives in New Braunfels, Texas.

Carlos H. Deere (B.S., 1950) is a retired writer and writes, "The pen may be mightier than the sword, but the television commercial put both of them to shame. I'd like to throw my TV set out the door into a downhill ditch so those commercials could run into eternity . . . and you thought you had it bad." Carlos lives in Bellville, Texas.

Gene C. Doty (B.S., 1954) is a retired U.S. Geological Survey hydrologist and writes, "Mopsy and the children are all well. Good to hear B. G. DuPree and family are doing so well. Best wishes to all." Gene lives in Las Vegas, Nevada.

Robert E. Doyle (B.S., 1955) is the owner of American Energy Investment Group and writes, "With much higher oil and gas prices many new domestic and international opportunities continue to emerge. We stay involved in horizontal drilling in the U.S. and overseas." Robert lives in Houston, Texas.

Ralph C. Duchin (M.A., 1955) writes, "[We are] still enjoying Tucson and making fewer trips to Houston for oil and gas interests." Ralph lives in Tucson, Arizona.

Connie Mayes Dyer (B.A., 1958) writes, "All is well for our family, and for that we are grateful. We enjoyed returning to the campus for the dedication of the Jackson School last year. Becoming the College of Geological Sciences will be even more exciting." Connie can be reached at cmdyer03@yahoo.com and lives in Houston, Texas.

Roger P. Espinosa (B.S., 1985) is currently employed with Metano Energy in San Antonio and writes, "We're awaiting a new addition to the family in mid-March. My wife and I have been told it's another boy—we have three already." Roger can be reached at respinosa2@satx.rr.com and lives in San Antonio, Texas.

Rizer Everett (B.A., 1937; B.S., 1937) is retired and writes, “I enjoy visiting family members in Maryland, Florida, and New Mexico.” Rizer lives in Austin, Texas.

James B. Furrh, Jr. (B.A., 1947; B.S., 1950) writes, “Although I’m no longer doing drilling deals, I currently invest in prospects and manage interests in Harrison and Panola Counties, Texas. Our drilling company has seven rigs that are contracted for the rest of the year.” James lives in Jackson, Mississippi.

Abelardo Garza-Hernandez (B.S., 1975) is a consulting geologist and writes, “I’m currently providing consulting services for mining companies in Mexico and have done so for the past 29 years.” Abelardo can be reached at agarza2@prodigy.net.mx and lives in Parral, Chihuahua.

Thurman Geddie (B.S., 1945) works at Geddie Oil Co. Inc./South Texas Royalty Co. and writes, “[I am] still in the oil and gas business; with these prices, it’s hard to quit.” Thurman can be reached at tggp1@aol.com and lives in Austin, Texas.

Christianne Gell (B.S., 1996) works as an account leader at Landmark Graphics and writes, “**Charlie** (M.A., 1996) and I moved back from Malaysia in October. I got a new job as account leader at Landmark, and Charlie has recently taken an account management position at Fugro-Jason.” Christianne can be reached at christigell@hotmail.com and lives in Houston, Texas.

Fred M. Gibson (B.A., 1951) writes, “[I am] still doing statistical work at the IRS in my retirement years.” Fred lives in Austin, Texas.

Georgette C. B. Goble (B.A., 1944) is a community volunteer and writes, “My family and I are fine. I am always proud to say that my B.A. in geology is from The University of Texas.” Georgette lives in Waco, Texas.

W. Leonard Goode (B.S., 1953) is a consulting geologist and lives in Midland, Texas.

Mark Gordon (Ph.D., 1990) is a geophysical imager at GX Technology Corporation and writes, “This past year has been difficult for Cecilia and me. Our son, Antal Thomas Gordon, passed away in July. He was born prematurely on February 29, 2004. He spent

his entire life in hospitals, first in Texas Woman’s Hospital and then for his last six weeks in Texas Children’s Hospital. He had several surgeries in his short life, including on his last day. He could not recover from this final surgery because of poor liver function. We have spent most of last year recovering from this trauma. We really appreciate all of the support we have received the past year from friends. My father passed away in November. He had been suffering from strokes and a heart condition for several years. We miss him, too. After this year there is nowhere to look but up.” Mark lives in Cypress, Texas.

Gregory Scott Grubbs (B.S., 1995) is an IT consultant and can be reached at greg@grubbsllc.com. Gregory lives in Denver, Colorado.

Henry R. Hamman (B.S., 1960) writes, “Still actively exploring in Texas and can’t believe the pricing. Life is good!” Henry lives in Houston, Texas.

Robert W. Hare (B.S., 1979) is a geologist at Producers Service Company. Robert lives in Fort Worth, Texas.

Louis Howard Haring, Jr. (B.S., 1938) is president of Haring Energy Co. and writes, “Last September I happily celebrated my 88th birthday with family and friends. It’s good to be able to say that I’m still living in my own home, driving my car, and living life pretty well (in spite of some aches and pain). My three sons all live nearby—my three grandchildren are a well source of joy to me. This past year I participated in drilling several wells—all in South Texas.” Louis lives in San Antonio, Texas.

Russell (B.A., 1969) and **Karen A. Harmon** (B.A., 1970) live in Raleigh, North Carolina, where Russell works as a senior program manager for the U.S. Army Research Office. Russell writes, “Life is good here in central NC. The twins graduate from university this year. My ARO Terrestrial Sciences program continues to grow, while my research on landmine detection and the basement geology of Panama is progressing well.”

Susan (Williams) Hass (B.S., 1986) writes, “I have been living just outside of Seattle for the past three years as a full-time mom of three active, interesting, and compassionate children,

ages 12, 10, and 7. Also, this makes me a full-time classroom volunteer in math, science, music, and creative writing. I am enjoying this stage of my life." Susan may be reached at susanwhaas1@aol.com and lives in Sumner, Washington.

Hugh Hay-Roe (Ph.D., 1958) works at BPZ Energy Inc., Houston, and is working with Ted Schulenberg (M.A., 1958) and Dwight Cassell (B.S., 1955; M.A., 1958) on the reunion of the 1950's grad students, planned for 2006. Hugh writes, "Thank goodness for email! Hope to see a lot of 'survivors' from a half-century ago at the reunion. Next year, I hope to be able to help—a long 'dry spell' may be coming to an end." Hugh can be reached at hhr@hal-pc.org and lives in Kingwood, Texas.

Reid Hensarling (M.A., 1981) writes, "Thank you for continued excellent service in the areas of geophysical and geological research and development. A series of articles on tsunamis may be very helpful at this time. May the School of Geosciences be a world leader in interpreting geological processes and events." Reid lives in Lakeland, Florida.

Janice L. Hill (B.S., 1979) is a full-time homemaker and writes, "We left Egypt in 2001 after six wonderful years in Cairo with BP and moved to Anchorage with John's new assignment. Anchorage is gorgeous, and cross-country skiing makes winters great. Our daughter, Caitlin, graduates from high school and will major in journalism at the University of Missouri at Columbia. Russell is into history and war games, so no future geologists." Janice lives in Anchorage, Alaska.

Nolan Hirsch (B.S., 1944) is president of MVC Inc. and writes, "[I am] still working on few personal prospects, while taking interest in the prospects of other geologists. It is harder to find good production than in past, or so it seems. My health is still good, yet I typically start the day later than I used to. I still enjoy the petroleum field." Nolan lives in Midland, Texas.

Ann Hoadley-Leist (B.S., 1979) works as a research manager for the Subsurface Library—Austin and writes, "I'm operating a Texas electric log research and copy service here in Austin. The city has changed, but the core has remained the same: Town Lake, Barton Springs,



Left to right, *Geo-triathletes* Katie Woodruff (B.A., Geological Sciences, 2001), Kathy Ellins (UTIG), and Stephanie Reed participated in the America's Triathlon & Memorial Day Remembrance Celebration, May 30, 2005, as part of the Leukemia and Lymphoma Society's Team in Training® Program. Team in Training® participants raised more than \$400,000 from this event to support blood cancer research focused on finding cures for leukemia, lymphoma, Hodgkin's disease, and myeloma and to improve the quality of life of patients and their families.

Sixth Street, the Christmas tree in Zilker Park. . . . Hello to old friends, come see me at the BEG if you're in town!" Ann can be reached at netgator@earthlink.net and lives in Austin, Texas.

Ben P. (B.S., 1980) and **Debra F. Hooper** (B.A., 1980) write, "Our daughter Mary will be attending UT Austin in the fall of 2005, while daughter Kelly (16) is a sophomore in high school. [We] are looking forward to spending more time in Austin." Ben and Debbie can be reached at joseyhoop@msn.com and live in Houston, Texas.

Eleanor M. "Ellie" Hoover (B.S., 1956) is a consultant and writes, "Congratulations to the Jackson School of Geosciences for its commitment toward excellence. I attended all the home football games again last year and was surprised to read that of 83,000 average attendance, only 27,000 of us were from out of town. Thanks to the Austin-area fans for their support. Hook 'em Horns." Eleanor lives in Conroe, Texas.

G. B. "Bill" Howard IV (B.S., 1982) is president of Flare Resources Inc. and writes, "We are primarily prospecting along the Gulf coast with our current emphasis on southern Louisiana."

Bill can be reached at gbhiv@aol.com and lives in Houston, Texas.

Ed W. Hughston (M.A., 1950) is self-employed and writes, “[I am] still living in Taos (26 years now) and enjoying the high-altitude climate.” Ed lives in Taos, New Mexico.

Elvin M. Hurlbut, Jr. (B.S., 1943) is retired and writes, “The UT Health Center at Tyler is located on the World War II Camp Fannin site. Lubbock sculptor Garland Weeks created a life-size bronze statue of an infantry soldier mounted on a pedestal on Camp Fannin Memorial Plaza at the Health Center. The statue was dedicated April 2, 2005, as a memorial to all the soldiers who trained there. This was a project of the Camp Fannin Association. I trained there from July 1944 to November 1944 and was in the first group from Camp Fannin to go to the Pacific Theater of war. I joined the 77th Infantry Division (the New York City ‘Statue of Liberty’ Division) on Leyte in the Philippines, February 1945. Virginia and I are still functioning.” Elvin lives in Tyler, Texas.

James R. “Jim Bob” Jackson (M.A., 1969) is president of Trace Oil and Gas and writes, “[I am] working on 3-D plays in Gulf Coast area. Erin and I enjoy traveling.” Jim Bob lives in Baytown, Texas.

Russell W. Jackson (B.S., 1976) is a geologist at Tyler Oil & Gas and writes, “I’m still in the midst of a huge boom here in East Texas—like everywhere else, I imagine.” Russell can be reached at rwjtogi@cox-internet.com and lives in Tyler, Texas.

S. Lance Jackson (B.S., 1979) writes, “I opened a new office in Kingwood and took one hour off my commute. I’m spending a lot of time working in the mid-continent again and loving it. My oldest son graduated from UT this past year; this makes two down and three to go.” S. Lance can be reached at ljack88856@aol.com and lives in Kingwood, Texas.

Jim Jansson (B.S., 1979) writes, “Twelve years now at Walter Oil & Gas in Houston. My oldest son is looking at colleges now, so I hope to be here for a few more (many) years. I ran my first marathon this year and was happy to be only ‘pretty slow.’ All is well with Linda and the boys.”

Karen Jarocki (B.S., 1992; M.A., 1994) is a hydrogeologist at MWH and can be reached at karen@jarocki.org. Karen lives in Albuquerque, New Mexico.

Leslie “Les” A. Jeske (B.S., 1984) is a hydrogeologist with Solutient Geosciences, Incorporated, and writes, “I’ve recently started my own environmental consulting practice and find that I enjoy the challenges. Life is great in East Texas with my wife and five kids. Please feel free to stop by and say hello if you find yourself in the area.” Leslie can be reached at ljeske@cox-internet.com and lives in Tyler, Texas.

Charles B. John (B.S., 1951) works as a geologist with the U.S. Bureau of Land Management and writes, “In 2004, I reworked the geology and mineral resources of Adair and Choctaw Counties, OK. I’m currently working on the Mississippian Barnett Shale Gas Play of North Texas. Norma and I are fine and working on our 59th year of marriage.” Charles lives in Tulsa, Oklahoma.

Charles G. Johnson (B.S., 1983) is a geologist at McGowan Working Partners, Inc., and writes, “I experienced great success in 04–05. Our acquisition of producing properties continues to expand with operations now in five states. Now remarried to my wonderful wife Ellen; we’re expecting our first (my fifth) child in the spring of 2005. It’s good to be in the oil business!” Charlie lives in Jackson, Mississippi.

J. Phil Jones (B.S., 1964) works at Devon Energy Production Co. LP and writes, “I’m counting to stay very busy in the Arkoma Basin with CBM development in Haskell and Pittsburg Counties, OK. In addition, the shale plays of eastern Oklahoma are expanding. Today’s oil price is \$54.95, while natural gas is at \$7.13, and that can’t be all bad. This is truly a fine time to be in the energy business. With only 160 undergrads, 170 graduate UT geology students and precious few petroleum engineers, the industry is soon to be in a world of hurt. Please keep up the good work and send some of those grads our way. Best regards, J. Phil Jones, CPL. Land Advisor, Arkoma CBM.” Phil can be reached at phil.jones@dvn.com and lives in Edmond, Oklahoma.



Third from left, standing, Pat Abbott (Ph.D., 1973) becomes a “star” when he is cast as the gold team’s professor on *The Real Gilligan’s Island* reality TV series. The cast was on location in Quintana Roo’s virgin jungle during August and September 2004. The eight-hour-long series played on TBS in November and December 2004. ©Turner Broadcasting System, Inc.

Ralph S. Kerr (M.A., 1976) works at Shell Oil Co.–Houston and writes, “I have been out of the geology world per se for some time now and have made a second career at Shell as a strategy and change consultant.” Ralph can be reached at ralph.kerr@shell.com and lives in Houston, Texas.

Paul B. Kirby (B.A., 2002) works at the LCRA, and his second son was born in October 2004. Paul can be reached at paulbkirby@yahoo.com and lives in Austin, Texas.

Don Kirksey (B.S., 1960) works at Kirksey Consulting Waste Management and writes, “Congratulations on your FOCUS magazine. I enjoy it. Plenty of good science that is inviting to read. B. J. and I are doing well. We have redesigned our waste management consulting business to increase clients and expand to other cities. My geology career of 30 years was all I hoped it would be when I entered UT in 1955.” Don lives in Oklahoma City, Oklahoma.

Erwin K. Krause (B.S., 1949; M.A., 1954) is retired and writes, “Still collecting alien body parts.” Erwin can be reached at erwinkrause@aol.com and lives in Houston, Texas.

George Laguros (M.A., 1987) is a senior geophysicist at Marathon Oil Co. and writes, “[I am] completing my 18th year with Marathon. I’m now working with the Anadarko Basin, near my hometown of Norman, OK. Is it bad form to say ‘Boomer Sooner’ in a UT newsletter? Michael (15), Daniel (12), and Virginia are all doing well.” George lives in Katy, Texas.

Bill Layton (B.S., 1981) is an independent petroleum geologist and writes, “KC and I are doing well . . . raising five kids . . . ages 16–21 . . . I’m currently drilling along the Gulf Coast and consulting . . . A special hello to all my 1981 ‘660 Buddies’ . . . The Phantom Rules . . .” Bill can be reached at laytonbrc@sbcglobal.net and lives in San Antonio, Texas.

Ray Leonard (M.A., 1977) completed four years as vice president for exploration and new ventures with YUKOS Oil in Moscow in December 2004. Ray writes, “To be part of a team that in four years doubled production to almost 2 million barrels per day and became the most profitable company in Russia and then be destroyed by the Russian government was a devastating experience.” In January 2005 he accepted a position as international senior vice president for exploration and production with MOL, the partially state-owned Hungarian oil

and gas company. He now lives in Budapest. His eldest son Ben, entered the UT Ph.D. program in January 2005 studying petroleum engineering.

Nancy Elizabeth (Green) Lister (B.A., 1955) writes, "Ray and I are enjoying his semi-retirement, having fun with our grandchildren, and loving traveling. Best wishes to all. I would love to hear from old friends!" Nancy lives in Houston, Texas.

Faqi Liu (Ph.D., 1999) is back in Texas now working in Houston for Amerado Hess.

Mark Longtine (M.A., 1991) is a geologist at Ecology and Environment, Inc., and can be reached at [mlongtine@ene.com](mailto:m longtime@ene.com). Mark lives in Bellingham, Washington.

R. Michael Looney (B.S., 1971; M.A., 1977) is a geologist and owner of Cyraec Exploration Inc. and writes, "In the last year of the exploration program involving Exxon's Texas 2D seismic database. I'm having great success, but still looking for bigger reserves. Hello to old friends." Michael lives in Houston, Texas.

Howard R. Lowe (B.S., 1948) is a geologist and executive for Thrace Development Company and writes, "[I am] involved in oil exploration in Kazakhstan—mainly onshore Pre-Caspian Basin. As of now we're waiting on a certificate to construct and operate a 48" oil pipeline to by-pass the Bosphorus—2.5 m2 BOPD line 121 mi. long—Black Sea to Saros Bay on Aegean." Howard can be reached at howalo7@aol.com and lives in Houston, Texas.

Chadwick "Chad" Nelms Lyons (B.A., 2003) is an exploration geologist at Woodard Energy Co. and writes, "Married to Katie Lyons and enrolled at the University of St. Thomas to receive my MBA. I am also a founding board member of Young Friends of CanCare." Chad can be reached at lyonscn@yahoo.com and lives in Houston, Texas.

Orville G. McClain (B.S., 1938) is retired and writes, "At the age of 94 my physical world is small, but my mind continues to range freely. I am extremely proud of the geologists and geophysicists for their advancement in knowledge and in utilizing it. The Jackson School of Geosciences is a wonderful development." Orville lives in Houston, Texas.

Bill J. McGrew (B.S., 1954; M.A., 1955) writes, "Still the same—just getting older." Bill lives in Columbia, Tennessee.

Timothy "Tip" Meckel (Ph.D., 2003) writes, "[I am] enjoying a post-doctoral research fellowship with the United States Geological Survey in Woods Hole, Massachusetts."

Charles M. Merrill (B.S., 1956) is retired and writes, "[I am] still enjoying the good life in far Southwest Austin. When I get bored, I go hiking in Big Bend, the Guadalupe, Zion, Bryce Canyon, the North Rim Grand Canyon and points in between. My life flashed before my eyes while hanging on the 'chains' going up Angel's Landing at Zion—1,500-foot drops on both sides—hoo-boy!! I wonder if they issued parachutes before the chains were installed?" Charles can be reached at austinmerrills@hotmail.com and lives in Austin, Texas.

Charna Meth (B.S., 1999; M.S., 2002) works at EarthScope and can be reached at cmeth@earthscope.org. Charna lives in Alexandria, Virginia.

Ginger Braswell Miller (B.S., 1987) is self-employed and writes, "Just when we thought spring was almost here (68% sunny) a storm blew in today and left everything white again. Life is great, however busy, with four kids, a wanna-be kid (lab), and a creative husband. I can't wait until school is out; I'm tired of homework and re-living fifth grade. God is Good!" Ginger can be reached at willimill@aol.com and lives in Englewood, Colorado.

Wayne D. Miller (M.A., 1957) is a consulting geologist and writes, "I am keeping very busy doing consulting for various companies. As long as I enjoy the oil business [I] will continue working, as it is still a fun business. I'm looking forward to the upcoming newsletter." Wayne can be reached at wdmillergoel@aol.com and lives in Midland, Texas.

Bill Monroe (B.S., 1963) is vice president of geology at Jetta Production Company and writes, "Strong commodity prices have resulted in more drilling, which is always a good trend in the petroleum industry. I've been married now for 2 1/2 years, and life in Fort Worth, Texas, is great." Bill lives in Fort Worth, Texas.



Standing in foreground, *Patricia Ellis (Ph.D., 1985), hydrologist with the Delaware Department of Natural Resources and Environmental Control Tank Management Branch at the Tibetan side of Mt. Everest.*

Jule J. Moon (B.A., 1940; M.A., 1941) is retired and writes, “[I am] living in and loving Fairhope, Alabama, and still loving and missing Texas.” Jule lives in Fairhope, Alabama.

Terry L. Moore (B.S., 1980) writes, “I have been retired for 4 1/2 years and keep busy as a full-time volunteer running a large adult Special Olympics program. My oldest daughter (+ granddaughter) remarried last year. My younger daughter graduated from TSU last year, while my son, Cyrus, lives with me.” Terry lives in Sugar Land, Texas.

Pat Murta (B.A., 1941) is retired and writes, “[I] will be 85 this summer if I make it. I’ve had 3 wives (2 deceased) and enjoy 15 children (a few steps), 34 grandkids and 6 or 8 great-grandkids with more on the way.” Pat lives in Tulsa, Oklahoma.

G. Allan Nelson (B.S., 1947) is self-employed as a consulting petroleum geologist and writes, “[I] moved my office to the house after 47 years. At age 83, [I] still well-sit on my own prospects, and occasionally I see Jack Osmond (B.S., 1947) for coffee.” Allan lives in Westminster, Colorado.

Ken Nemeth (M.A., 1976) is a senior geoscientist at Schlumberger Information Solutions and writes, “[I] continue to enjoy assignments with Client Services Group. I am in my first

term as treasurer for the Houston Geological Society. If you come to the general dinner or lunch meetings, say hello.” Ken can be reached at knemeth@houston.oilfield.slb.com and lives in Houston, Texas.

Isaac W. Norman (B.S., 1948) lives in Taylor, Texas.

A. M. “Red” Olander (B.S., 1948) is retired from ExxonMobil and writes, “I enjoy living in Austin and especially the Longhorns’ football, basketball, and baseball games. We’re looking forward to spending time in our completed Lake Travis place. I’ve enjoyed visiting ‘Jock’ Norman (B.S., 1948), Calvin Percy (B.S., 1948) and Bob Grayson (B.S., 1948) this past year.” Red lives in Austin, Texas.

Kenneth I. Owens (B.A., 1954) is retired and writes, “Living in Austin truly thrives me, and the Austin Geological Society is a dynamic group.” Kenneth lives in Austin, Texas.

Woody Pace (B.S., 1985) is working as an exploration manager–Deepwater Gulf of Mexico at Marathon Oil Company and writes, “I am enjoying work on the Gulf of Mexico after all those years of international assignments.” Woody can be reached at fwpace@marathonoil.com and lives in Cypress, Texas.

Jeffrey J. Palmer (M.A., 1982) is working as an exploration geologist at Exxon-Mobil and writes, “I have been working as a geologist for ExxonMobil for over 22 years now, first in New Orleans and now in Houston for the last 10 years. I’m currently working on our Chad Project. I should be seeing more of Austin when my son enrolls at St. Edwards University in the fall of 2005.” Jeffrey can be reached at jjpalmergeo@aol.com and lives in Spring, Texas.

Tim Parks (B.S., 1988) and **Leah** (B.S., 1987) write, “Everyone’s great—Maggie (11), Steele (9), and Janie (3).” Tim and Leah can be reached at theparks5@earthlink.net and live in Houston, Texas.

Elliott Pew (M.A., 1982) is executive vice president for exploration at Newfield Exploration and writes, “Terry and I are now ‘empty-nesters,’ having sent our youngest to UT Austin last fall (unfortunately, not in geology!) I still love the hunt for oil and gas even though I don’t get to skip logs much anymore! Alumni and visitors are always welcome to Newfield, come on by!” Elliott can be reached at e55pew@aol.com and lives in Conroe, Texas.

John L. Proctor (B.A., 1950) is retired and writes, “I recently went on a bus and rail tour of the Canadian Rockies, called The Rocky Mountaineer. The climax of the tour was our stay at the Chateau Lake Louise.” John lives in New Braunfels, Texas.

Donald F. Reaser (Ph.D., 1974) has been designated as Professor Emeritus at UT Arlington in the fall 2004. Donald lives in Waxahachie, Texas.

Jess P. Roach (B.A., 1941) is retired and writes, “My health hit a snag in the fall of 2004. A car wreck, then a heart problem kept me in and out of the hospital and doctor’s offices from mid-November to mid-January. Now, I’m back to exercising and my normal activities. I am thankful for my long life and my friends, and I hope to live to see Jackson School of Geosciences become number one.” Jess lives in Austin, Texas.

Ron S. Robinson (B.S., 1958), Coldwell Banker, is the owner of Robinson Real Estate and writes, “\$50/BBL, 3-D seismic and user-

friendly division orders: fortunately, South Arkansas is getting its share of attention. This has even helped my most recent (31 years) career in real estate. I have two daughters—one a Methodist minister in Chicago, the other (a professor of engineering at L.S.U.) in Baton Rouge—and one son (CDR) in the Navy, all of whom have blessed us with seven grandchildren. God is truly great and good.” Ron can be reached at ron@robinsonrealestate.net and lives in El Dorado, Arkansas.

Jimmie Norton Russell (B.A., 1952; M.A., 1954) works as a public school teacher and writes, “Now in (my) 11th year in public schools—my how time flies when you’re having fun! I am continuing to work with emotionally disturbed 6th–12th grade students in the Round Rock I.S.D. I enjoyed seeing and/or hearing from former UT classmates this past year—WONDERFUL!” Jimmie lives in Austin, Texas.

Philip K. Sampler (B.S., 1951) is retired from Sampler Oil and Gas, Incorporated, and writes, “Enjoying the high oil prices! I had to plug a lot of our wells when prices were \$8 to \$10/bbl. Wish we had them back now. My wife, Luci, has gone back to college and graduates in May: (what a ‘Super Gal’—Phi Theta Kappa Honors Scholar with 4.0 GPA and 74 years old.” Philip can be reached at pk_sampler@hotmail.com and lives in Richardson, Texas.

Richard H. Sams (Ph.D., 1991) is a consulting geologist for Sams Exploration Incorporated and writes, “I’ve been exploring for oil and gas in South Texas and Trinidad.” Richard lives in Atlanta, Georgia.

Jack S. Sanders (B.S., 1957) is retired and writes, “Enjoying life! Trying to stay partially attuned to the explosion of technology and knowledge. Whether ‘old’ or ‘new,’ isn’t geology great?” Jack lives in Dallas, Texas.

George W. Schneider (B.S., 1958) is retired and writes, “I continue to enjoy life on the Tchefuncte River.” George lives in Madisonville, Louisiana.

Paul E. Schnurr (M.A., 1955) is retired and writes, “I am enjoying good health. We have cut back on traveling and enjoy watching the grandchildren grow up.” Paul lives in Concord, California.



A new high for the Jackson School—Sheila Burnette Hall (B.S., 1977) holds a Jackson School shirt on the top of Mount Kilimanjaro (Uhuru Peak), Tanzania, at 19,340 feet. Photo taken April 2005.

John T. "Ted" Schulenberg (M.A., 1958) writes, "Decided that I must be retired, as I have done no consulting for the past six months. On the brighter side, Janet and I took an interesting three-week trip through Eastern Europe in March and a month-long driving trip through the good old USA in May. Hope to see lots of you folk at next year's reunion." John lives in Kerrville, Texas.

Rubin A. Schultz, Jr. (B.S., 1961) is working as the district maintenance manager for the Texas Department of Transportation and writes, "Not a lot new—still with TxDOT and making a couple of trips a year to the condo on Maui, HI. I reached 40 years with TxDOT in Corpus Christi last August." Ruben lives in Corpus Christi, Texas.

Eugene Patrick Scott (B.S., 1957) is still a petroleum geologist in Corpus Christi, Texas.

Robert T. "Bob" Sellars, Jr. (B.A., 1957) is working as an independent geologist in the Rocky Mountain Basin and writes, "It is rewarding to see the department grow, not only in size, but excellence as well. The faculty at UT in the 50's formed some of the building blocks for the department's growth in stature that we see today." Robert can be reached at rsellars@rtsellars.com and lives in Denver, Colorado.

Stephen L. Shaw (B.S., 1971; M.A., 1974) is a senior geological advisor at Burlington Resources and writes, "I have really enjoyed serving on both the AAPG Advisory Council and

the Advisory Council to the Geology Foundation of the Jackson School. Nancy and I continue to enjoy traveling and living in Midland."

Samuel J. Sims (M.A., 1957) writes, "I continue to work as a consulting geologist in the commercial and chemical stone industry in Southeastern and Central Pennsylvania. Retirement is gradually creeping closer, but still not there. My regards to those who still remember me." Samuel can be reached at s768@aol.com and lives in Bethlehem, Pennsylvania.

Charles E. Smith (B.S., 1954) is retired and an emeritus member of the AAPG. Charles lives in Dallas, Texas.

Dan L. Smith (B.S., 1958) owns his own company and also works as executive vice president at Sandalwood Oil & Gas Company and writes, "I continue with pure exploration in the Gulf Coast area, mostly onshore, but some offshore. I love what I do and I hope to never completely retire. Over the past three years executing my business plan, I have drilled 15 exploration prospects with 70% success." Dan lives in Houston, Texas.

Paul K. Smith (B.S., 1984) is an activities instructor at the Lake Austin Spa Resort. Paul can be reached at bluegeckoyoga@aol.com and lives in Austin, Texas.

Theodore Stanzel (B.S., 1956) is president of Victor STANZEL Company and writes, "I remain active in airplane tour sales for Victor STANZEL Company. Even so, the STANZEL

Company manufacturing phase has been discontinued. We have now established the Stanzel Brothers Factory Museum as an expansion of the Museum Complex of the STANZEL Family Foundation.” Theodore can be reached at tedstanz@cvtv.net and lives in Schulenburg, Texas.

Thomas W. Stern (M.A., 1948) is retired from the U.S. Geological Survey. Thomas lives in Bethesda, Maryland.

Bill St. John (B.S., 1958; M.A., 1960; Ph.D., 1965) works as an international consultant and writes, “I am working the East Africa/Western Indian Ocean. International consulting work is picking up. I’m currently working out of Kerrville—all old friends/classmates invited to visit.” Bill can be reached at bstj455@kctc.com and lives in Kerrville, Texas.

Ted Stout (B.S., 1985) is chief of interpretation of the Craters of the Moon National Monument and writes, “In 2004 I completed my first year at Craters of the Moon. Like ‘Hawaii in Idaho,’ the park contains an amazing array of volcanic features. We live in the tiny town of Picabo just outside of Sun Valley.” Ted can be reached at ted_stout@nps.gov and lives in Bellevue, Idaho.

Mike Stowbridge (B.S., 1982) is a consulting geologist and writes, “For the first time in my career, the oil business is growing. Everything is hard to get, overpriced and it’s muddy everywhere, but ‘the prize’ is finally worth the effort.” Mike can be reached at mikestowbridge@peoplepc.com and lives in Abilene, Texas.

Christopher Swezey (M.A., 1991; Ph.D., 1997) works as a research geologist at the U.S. Geological Survey in Reston, Virginia, and can be reached at cswezey@usgs.gov.

Arthur J. “Art” Tschoepe (B.S., 1951) is semi-retired and consulting RRC Dist. #1, 2, 3, and 4 in Texas. Art lives in Leakey, Texas.

Jean-Paul Van Gestel (Ph.D., 2000) is working as a geophysicist in Brazil deepwater exploration for BP Netherlands and writes, “It was a very eventful year for me; I got married, bought a house, and just when I thought life was going to get a little bit more relaxed, my wife accepted a job with BP Netherlands, in The Hague. We moved

over there in January and have had a great time so far. Keep up the good work in Austin.” Jean-Paul lives in The Netherlands.

Charles Vertrees, Jr. (B.S., 1951) is retired and writes, “Still in Dallas playing lots of golf. Nothing has changed regarding family life: same wife, children, and grandchildren since the last report. My health is good for someone 76 years old. Wow, that old!” Charles lives in Dallas, Texas.

J. Dudgeon Walker, Jr. (B.S., 1951; M.A., 1954) is a retired geologist and writes, “I still haven’t read my name in the ‘obits’ yet. Things are still fairly stable. My wife Shirley and I are the only ones left at home. Even the “Lab dog” has moved out. I still have 3 children, and 11 grandchildren, all in good health and doing well in this disgusting economic environment! Made in China is the current saying, and most of the gasoline credit cards are handled by Asiatics. However, I’m still having a pretty good time with the other ‘retirees.’ Keep up the good work with the ‘Newsletter.’ It is very much appreciated!” Joe lives in Houston, Texas.

Virgil A. Walston, Jr. (B.S., 1960) is retired and can be reached at 36suzanne@direcway.com. Virgil lives in Moulton, Texas.

Bernie Ward (B.A., 1955) writes, “I am still working, and we do some traveling. My daughter, UT class of ‘85, turns 40 this year. As Tyler sage Allen Locklin (B.S., 1954) says, ‘Watch for the old W. P. tax to creep back in!’” Bernie lives in Tyler, Texas.

Ralph H. Warner (M.A., 1961) is retired and writes, “Experienced the creeping approach of age in 2004 with a slight stroke in January and a heart attack in June. It appears tennis and yard work now have their diminished roles. The rest of the family is doing fine. Looking forward to a better 2005.” Ralph lives in Kingwood, Texas.

Karl Warning (B.S., 1971; M.A., 1977) writes, “Photographing and describing minerals for weekly auctions keeps me busy. Check them out at mineralauctions.com. I’m looking forward to the annual Grad School Football Weekend this fall, as we missed last year.” Karl lives in Lucas, Texas.

Charles Weiner (B.A., 1948) is a geologist with Westerley Exploration Inc. and writes, "With help from a host of friends, I am enjoying exploration, primarily onshore in North America. My usual good luck is in the current pricing of oil and gas. The potentials are exponentially greater with the elevated values." Charles can be reached at chas@texcrude.com and lives in Houston, Texas.

Frank A. Welder (B.S., 1949) is retired from the U.S. Geological Survey Center and writes, "[My] wife Jean is still teaching yoga after 30 years. I'm still into fitness and Tai Kwon Do, as well as involved in toxic waste disposal problems." Frank lives in Meeker, Colorado.

Steve White (B.S., 1978) is a consulting geologist and writes, "I'm still enjoying the oil business in Tyler, and higher oil price while they last." Steve lives in Flint, Texas.

Charles D. Whiteman, Jr. (B.S., 1958) lives in Denham Springs, Louisiana.

Fred L. Whitney (B.S., 1943) sends best wishes to all. Fred lives in Kerrville, Texas.

Jeffrey Williams (B.A., 1988) works as a petrophysicist at Supersonic Geophysical, LLC, and writes, "Our baby daughter (Gladys) was born healthy December 26, 2005. Business is in its fourth year, and we're very busy. Dead Sea earthquake research is ongoing, and I received an M.S. in civil engineering last December. Next, I will start studying for a Gemology Certificate in September 2005." Jeff can be reached at jeff.williams@acousticpulse.com and lives in Los Angeles, California.

William Feathergail Wilson (B.S., 1960; M.A., 1962) is president of Strata Geological Services, Inc., and writes, "I am working as a geologist about seven days per week concentrating on ground water and the complex stratigraphy

of the Texas Hill Country and [I] write a weekly science and agriculture column for the *Bandera Bulletin*." William can be reached at featherg@hctc.net and lives in Bandera, Texas.

David Worthington (B.A., 1986) is the owner of a geotech firm and writes, "Now have 20 years' professional experience in the southern California land of quakes, slides, and overpriced housing! Keeping fit, working/playing hard. Still and always—Texas proud. Live strong, all!" David can be reached at worthy10@aol.com and lives in Costa Mesa, California.

Jesse W. Wright, Jr. (B.S., 1950) is retired and can be reached at jwwright3@sbcglobal.net. Jesse lives in San Antonio, Texas.

Susan W. Young (M.A., 1985) is a staff geologist for ConocoPhillips working exploration in the Gulf of Mexico and writes, "We've been in Houston for six years now and have two teenagers ages 12 and 14." Susan can be reached at soosnrandy@sbcglobal.net and lives in Houston, Texas.

William C. Young III (B.A., 1961) is retired and writes, "[I am] still enjoying traveling, bridge and the grandkids." William can be reached at wyoung3@bellsouth.net and lives in Shreveport, Louisiana.

Francis Scott Zimmer (B.S., 1986) works as a senior public health sanitarian for the Oneida County Health Department and writes, "It has been a very busy year for Melanie and [me]. Melanie's business as a puppeteer and a storyteller has grown. She continues to enjoy giving performances to schools and libraries. I continue to work in environmental health, investigating lead poisonings and IAQ problems. I hope all is well with everyone." Francis can be reached at fsz@dreamscape.com and lives in Vernon, New York.



Y'all come!

If you were a graduate student in Geology at UT at *any* time during the decade of the 1950s, you are cordially invited to the

HALF-CENTURY REUNION

BEING PLANNED FOR LATE SPRING 2006 IN AUSTIN

Exact dates for the three-day event will be announced after the preferences of likely participants are tallied.

If you would like to indicate your preference but did not receive a questionnaire, contact the Steering Committee or UT (contact information below).

REUNION HOTEL SITE—to be announced later.

URGENT NOTE

to those who received the First Notice but have yet to return the questionnaire enclosed therein: We would appreciate your doing so now. For planning purposes it is important that the Steering Committee have a good handle on expected turnout and preferences.

GENERAL PROGRAM

Day 1	<i>Afternoon:</i> Check-in and late registration <i>Evening:</i> Reception with cash bar; make your own dinner plans
Day 2	<i>Morning:</i> Guided tour of Department of Geological Sciences <i>Afternoon:</i> Take your pick of special events <i>Evening:</i> Cocktails and dinner (location to be announced)
Day 3	<i>Morning:</i> Farewell breakfast <i>Afternoon:</i> Possibly more special events to choose from

CONTACT INFORMATION

Jackson School of Geosciences

Ms. Glynis Morse, P.O. Box B, Austin, TX 78713-8902

Phone 512-471-5600; gmorse@mail.utexas.edu

STEERING COMMITTEE

Ted Schulenberg
Phone 830-792-5608
schulen@ktc.com

Dwight Cassell
Phone 512-288-3631
declsc@texas.net

Hugh Hay-Roe
Phone 281-358-5871
hhr@hal-pc.org



JOIN US

We have under way a grand new enterprise, the Jackson School of Geosciences, which we anticipate will carry the geosciences at The University of Texas at Austin to great heights. We want all our Exes and friends to be a part of this enterprise. Your continuing support and input are important to us. This past year, we received gifts from about 250 individuals and more than 50 groups. We appreciate each and every gift, and we pledge to make the most of your support.

One of the most important parts of the *Newsletter* is the response from Exes. This year, approximately 150 of you responded. We hope the number will continue to increase.

Contributions to the Geology Foundation may be made in the form of cash, bonds, life insurance, gift annuities, and tangible property such as real estate. Many major corporations provide matching funds for contributions made by employees and their spouses. The Foundation staff can assist in the arrangement of the match. For assistance or information, you may contact Doug Ratcliff at (512) 471-4968 or e-mail at dratcliff@mail.utexas.edu or me at (512) 471-5600 or e-mail at wfisher@mail.utexas.edu. You may also visit us at our two Web sites, the Department of Geological Sciences at <http://www.geo.utexas.edu> or the Geology Foundation at <http://www.geo.utexas.edu/foundation/>.

We appreciate your support.

Bill Fisher, Director

